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December 2010, Issue 17

Health Policy Research Bulletin

Migration Health

Health Policy Research Bulletin

Migration Health:
Embracing a Determinants of Health Approach

People have been migrating or "on the move" since the earliest of times. Although the health issues associated with migration have long been of interest, changes in the patterns, volume and demography of migration are creating new challenges and opportunities. This issue of the *Health Policy Research Bulletin* examines how research is helping to broaden the approach to migration health, from one principally focused on preventing the spread of disease to one that also seeks to maintain the health of newcomers as they settle into their new environments. In particular, this issue:

- analyzes migration patterns, explores the drivers and impacts of immigration, and traces the evolution of migration health policies and practices in Canada
- reviews research on the "healthy immigrant effect" and patterns of immigrant health over time, and looks to new research on the social determinants of health to understand and address health inequities among migrant populations
- presents research "snapshots" pertaining to the mental health and chronic diseases of immigrants, and the determinants of health of temporary migrant farm workers
- features two studies—one that examines patterns of health services use among immigrants to Canada, and another that looks at the effects of social capital on their health
- describes the epidemiology of HIV and tuberculosis in immigrants from countries where these infectious diseases are endemic
- examines the evolution of surveillance and data collection systems and identifies the types of data and research that will be needed in the future.

Finally, this issue emphasizes the importance of intersectoral collaboration at all levels and highlights the World Health Assembly's 2008 resolution calling on Member States to improve the health of migrant populations through a comprehensive approach that includes action on the social determinants of health.

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Canada

Glossary

Although no universally accepted definitions of some of the following terms exist, these definitions will assist readers of this issue of the Bulletin.

In General

Migrant—International: A non-national who moves across an international border for one of several reasons, including settling, working, seeking protection, studying or visiting. Immigrants, refugees and temporary residents are all international migrants.

Immigrant: A non-national who moves into a country for the purpose of settling.[1]

Refugee: A person who fears returning to his or her home country (for fear of persecution, cruel and unusual treatment, or punishment) and who seeks the protection of another country.[2]

In Canada

Permanent Residents: A person who has been granted permanent resident (PR) status in Canada, with all of the rights guaranteed under the *Canadian Charter of Rights and Freedoms* except the right to vote.[3] The three primary Citizenship and Immigration Canada categories of PRs are:

- **Economic Immigrant:** PRs selected for their skills and ability to contribute to Canada's economy. Includes skilled workers, business immigrants, provincial or territorial nominees and live-in caregivers. Includes the Principal Applicant and, where applicable, the accompanying spouse and/or dependants.[3]
- **Family Class Immigrant:** PRs sponsored by a Canadian citizen or a PR living in Canada who is 18 years of age or over. Includes spouses, partners, parents, grandparents and certain other relatives, but excludes fiancé(e)s.[3]
- **Refugee (see definition above):** Includes government-assisted refugees, privately sponsored refugees, refugees landed in Canada and refugee dependants.[3]

Temporary Residents: Includes visitors to Canada, foreign students and foreign temporary workers. Temporary residents are authorized to enter and remain in Canada on a temporary basis; they must leave Canada by the end of the authorized period, but may re-enter Canada under certain circumstances.[3]

For further information, including additional terms and definitions, please visit the Citizenship and Immigration Canada website at: http://www.cic.gc.ca/english/index.asp

Please note: Full references are available in the HTML version of this issue of the Bulletin: http://www.healthcanada.gc.ca/hpr-bulletin

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Migration Health: Emerging Perspectives

In this issue, Nancy Hamilton, Managing Editor of the Health Policy Research Bulletin, *speaks with* Marie DesMeules *(MD), Director, Health Determinants and Global Initiatives Division, Health Promotion and Chronic Disease Prevention Branch, Public Health Agency of Canada (PHAC);* Nabanita Giri *(NG), Director, Strategic Policy Research Division, Strategic Policy and International Affairs, PHAC; and* Dr. Danielle Grondin *(DG), Director General, Policy Integration, Planning, Reporting and International Directorate, Infectious Disease Prevention and Control Branch, PHAC.*

What do we mean by "migration health" and why is it important?

DG: Migration, or population mobility, is not new. However, with globalization, international migration is a growing phenomenon. At any point in time, about 214 million people are migrating worldwide. If we were to put all of these people in one country, it would be the fifth most populous country in the world. The health issues associated with migration have become more prominent in recent decades. In 2008, the World Health Assembly adopted a resolution calling on Member States, including Canada, to explore options to improve the health of migrant populations. [Editor's note: Although there are health issues associated with all types of migration—including business and holiday travel—this issue of the Bulletin focuses on the health of immigrants, refugees and temporary foreign workers in Canada.]

NG: People migrate back and forth across international borders for a variety of reasons. Immigration, or the process of moving into a country with the purpose of settlement, has been an important aspect of nation building in Canada. For the past 10 to 12 years, the country has been taking in about 1% of its population each year through immigration. With our aging population and declining birth rate, immigration is essential for Canada's labour market. Over the past decades, we've also seen changes in the demographic profile of migrants to Canada. While newcomers were typically from Europe in the post-war period, they're now increasingly from Asia and Africa. These shifts are contributing to Canada's diversity, particularly in our large metropolitan areas, and are challenging us to understand what fosters successful settlement and integration. It's important that we also learn how the migration experience affects people from all over the world differently and what makes some groups more vulnerable than others.

How has migration health been approached over the years?

MD: In the early years, host countries like Canada were primarily concerned with preventing the spread of infectious disease. Public health focused on screening and quarantine measures to protect the host population. Over time, the approach broadened to also consider the health of migrating populations and how best to meet their needs. I believe public health is at a juncture in terms of how it approaches migration health. We are now pursuing a "determinants of health" approach,

which means looking at multiple factors and how they interact to affect the health of different populations (see sidebar, below). There is now more awareness of the importance of health inequalities and, in Canada, addressing these inequalities is one of the top priorities on Canada's public health agenda.

What has the federal health role been in terms of how migration health issues have been governed in Canada?

DG: Migration health legislation dates back to the early years of Confederation. The first *Quarantine Act* was enacted in 1872 to protect the public from infectious disease. Regulations dealing with the medical screening of migrants soon followed (see article on page 12). Over the years, the *Quarantine Act* has been updated, most recently in 2004. There is also the *Immigration and Refugee Protection Act*, which is not only concerned with protecting public health but with ensuring that migrants do not place excessive demands on our health and social services. Because most people arriving in Canada must wait three months to qualify for provincial/territorial health insurance, we also have the *Interim Federal Health Program*, which provides temporary health coverage to refugees, people claiming refugee status and their dependants to allow them access to essential and emergency health care. Canada is also a signatory to the *International Health Regulations*, which require countries to detect and report infectious disease threats.

What is research telling us about the health of immigrants to Canada?

MD: Research shows that, in general, immigrant populations are healthier than the Canadian-born population when they first arrive in the country (see article on page 17). This has become known as the "healthy immigrant effect" and has been observed using different measures, such as mortality rates, self-reported health status and prevalence rates of certain chronic diseases. However, research also shows that this health advantage seems to decline over time, so that after 10, 15 or 20 years in Canada, it is no longer apparent.

What is behind the "healthy immigrant effect"?

MD: There are likely a number of explanations. With screening measures in place, it makes sense that those admitted to the country may be healthier. Then, there's self-selection; in any society, it is usually those in the best health who decide to migrate, whether to somewhere else in their own country or to another country.

DG: Marie's point about self-selection is very important. It takes courage, stamina and resources to migrate. People who are poor, sick or debilitated generally do not migrate. While working in migration health internationally, I saw this first hand. Even in developing countries, it would be the hardiest who would move in search of opportunity for themselves and their children. In addition to "pull" factors such as these, there are also "push" factors. With wars and natural disasters, we see forced migrations, with refugees fleeing their homelands and seeking refuge across international borders.

Do we know why the healthy immigrant effect declines over time?

NG: I often refer to this loss in health advantage as normalizing to the "Canadian reality." In studying why this happens, we see a mix of factors. One possible factor relates to differences in health behaviours. Some research is showing that while immigrants often have more positive health habits (for example, with respect to diet and physical

The Determinants of Health

In the early 1990s the Federal/Provincial/Territorial Committee on Population Health drew attention to research suggesting that health is influenced by the interaction of a range of determinants (income and social status, social support networks, education and literacy, employment/working conditions, social environments, physical environments, personal health practices and coping skills, healthy child development, biology and genetic endowment, health services, gender and culture).[1]

In recent years, as attention has increasingly focused (both internationally and in Canada) on health disparities between certain population groups, research has underscored the powerful influence that the social and economic determinants of health (e.g., income, social support) have in contributing to these inequities. These determinants have become known as the social determinants of health (SDOH). While shedding light on the reasons underlying health inequities, research on the SDOH is also contributing to the overall evidence base on the determinants of health.

activity) upon arrival in Canada, over time, they approximate those of the Canadian-born, potentially contributing to the increase in certain chronic diseases.

MD: We also have to look at the social determinants of health. For some immigrant groups, their language ability, job skills and education are protective factors that are linked with good health. Other groups may have less social support and poorer language skills, and have more difficulty finding employment. Over time, delayed employment and a lack of adequate income can lead to poorer health status.

NG: Underemployment and a lack of skill recognition are also important. All too often, newcomers, who had been working as licensed professionals in their home country, arrive in Canada to face barriers and delays in having their credentials recognized. The prolonged inability to find employment where people can utilize their skills and fulfill their potential is a powerful determinant, especially when someone has left their home country with expectations that are never realized.

Are we seeing inequalities in health among immigrant populations, or varying levels of vulnerability?

MD: First, newcomers to Canada are by no means a homogeneous population. Even within immigrant and refugee categories, there is tremendous heterogeneity. Moreover, many are arriving after difficult journeys from homelands torn apart by war and instability. As a result, the migration process itself can put some groups at greater risk. Difficult migration experiences, coupled with language and job skill deficits, can further increase the risk of transitioning to poorer health.

NG: Research shows that access to meaningful employment is critical. However, when looking at the data over the past 15 to 20 years, we see that it's taking longer and longer for the income levels of certain immigrant populations to come up to par with the Canadian-born. We're also seeing a racialization in these trends (see article on page 26). Research is finding, for example, that in large metropolitan areas like Toronto, certain ethnic groups are at an increasing economic disadvantage.

Underemployment and a lack of skill recognition are also important. All too often, newcomers, who had been working as licensed professionals in their home country, arrive in Canada to face barriers and delays in having their credentials recognized. The prolonged inability to find employment where people can utilize their skills and fulfill their potential is a powerful determinant, especially when someone has left their home country with expectations that are never realized.

DG: I draw your attention to the PHAC Chief Public Health Officer's 2008 Annual Report, which points out that certain migrant populations are disproportionally represented among Canada's poor. And, as population health research has shown, poverty has a powerful influence on health.

MD: When we look at the demographics of those at risk, we see that seniors, low-income immigrants and children—especially unaccompanied children—are among those at greatest risk. Another phenomenon is the increasing feminization of migration. While in past eras, the majority of migrants were men, women now comprise more than 50% of migrants in many countries and over 60% in those with large programs of domestic services. Women are increasingly migrating alone, with the family following, creating what has become known as the "transnational family." This has critical implications for public health, especially when looking at issues of maternal and child health.

What actions are federal health authorities taking to improve the health and settlement experiences of newcomers?

MD: In Canada emergency health care is provided to refugees immediately upon entry. Moreover, many of PHAC's prevention programs and surveillance activities consider the needs of migrant populations. For example, we've been working to identify relevant data sources and have been collaborating with the provinces and territories to better describe migrant health status and understand how and why it changes over time. We've also been looking at the effectiveness of our interventions from a public health perspective.

NG: In terms of practices, PHAC funds certain community-based programs that have a large immigrant base. By targeting the most vulnerable, early intervention programs like the Community Action Program for Children and the Canada Prenatal Nutrition Program work to reduce health inequalities within communities. We've been encouraged by the successes that the program evaluations have shown among immigrant populations.

Research is also important. Both PHAC and Health Canada are committed to be research-based and research-informed organizations. In the area of migration health, PHAC is an active participant in the Metropolis Project (Health Canada was a previous partner). Metropolis, a Citizenship and Immigration Canada-led research partnership established in 1994 (see *Who's Doing What?* on page 50), is a global network for comparative research and public policy in the areas of migration, diversity and immigrant integration in cities in Canada and around the world.

What are some of the key challenges in moving forward?

MD: A key challenge is the complexity of the migration health issue. A determinants of health approach requires intersectoral action and, as we know, this is not easy—even for traditional public health efforts. Partnerships will be essential. By working together, we'll be better able to monitor the health of migrating populations, to identify the gaps in access to health and other services, and to improve the social determinants of health within host communities. As we strive to reduce inequalities, we're finding that determinants such as health literacy and the availability of culturally sensitive services are huge issues for many immigrants.

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NG: Issues of access and utilization are critical. In looking at different models, we see that it's not about having "separate" health services but, rather, having integrated services that people from various backgrounds feel comfortable accessing. We need to think beyond the availability of services to why people from different backgrounds may or may not choose to access them. Looking at best practices with respect to culturally appropriate programs and services will be vital.

DG: Another challenge relates to the need to look at the entire journey of those who are migrating because, in more and more cases, people are not going directly from their "home" country to their final destination; rather, there are many transit points along the way. Also, once settled at their final destination, people are more frequently travelling back and forth to their "home" country. From a public health perspective, this continuous movement needs to be taken into consideration, at the global as well as the national level. That is why the World Health Assembly is moving forward with a comprehensive framework for migration health that can serve as a basis for the development of national plans.

MD: We also need to think beyond the short term. Taking a longer term perspective is critical, as many of the mental health and chronic disease issues don't surface until years or decades post-migration. We're also seeing this with certain infectious diseases, as people face secondary exposures during repeated visits to their home country (see article on page 33). So, we will need to have the surveillance and data collection systems in place to follow populations into the second, and even third, generation.

NG: This leads us to an interesting philosophical question: When does a migrant stop being a migrant? Is it after 20 years? 40 years? Or is it three generations later? Researchers are beginning to give some thought to this as it relates to issues of integration and identity. ■

Please note: Full references are available in the HTML version of this issue of the Bulletin: http://www.healthcanada.gc.ca/hpr-bulletin

Migration Patterns and Trends: A Quantitative Snapshot

Wendy Cymbal and **Stefanie Bujnowski**,
International Affairs Directorate, Strategic Policy Branch, Health Canada

The transnational flows of people across the globe have created a unique and diverse mix of languages, cultures, ideas and expertise. This article introduces migration from a global perspective and provides a more in-depth look at the Canadian context, tracking shifts in the countries of origin and demographic make-up of immigrants. It explores various drivers and impacts of immigration, as well as opportunities and challenges.

A Global Perspective

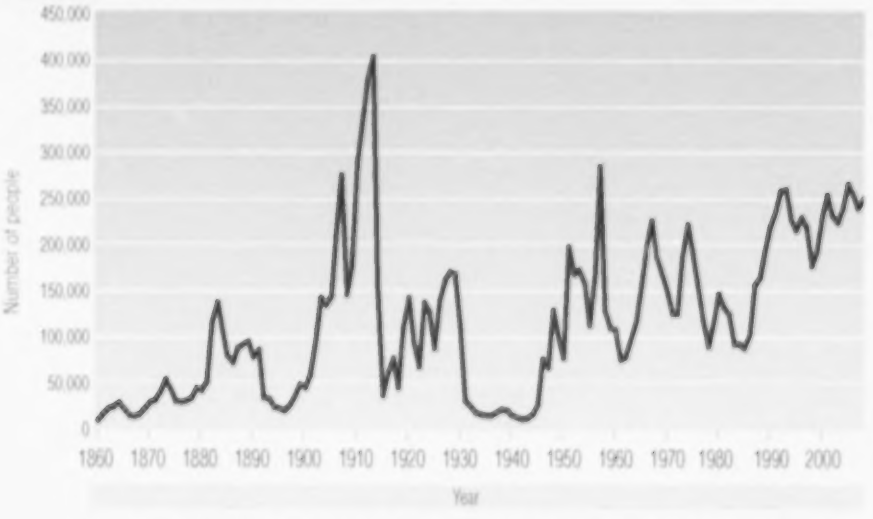
The migration of people across national borders is not a new phenomenon, but the increasing volume of flows of people has been a distinguishing trend over the past several decades. From 1960 to 2006, the number of international migrants almost tripled, from 75 to 200 million.[1] The most current estimates (2008) suggest that there are 214 million migrants worldwide, of which 49% are women. International migrants make up 3.1% of the world's population and together would constitute the fifth most populous country in the world.[2]

The five countries with the highest absolute number of international migrants include: the United States (42.8 million), Russia (12.3 million), Germany (10.8 million), Saudi Arabia (7.3 million), and Canada (7.2 million).[3] Between 2000 and 2010, the main countries of origin included China, India, Indonesia, Mexico and the Philippines.[4] In 2009, migrants sent $414 billion in remittances back to their home countries, of which $316 billion went to developing countries.[2] Thus, the income generated by international migrants can help to facilitate development and raise living standards of people throughout the world.

The Canadian Context

Immigration is the cornerstone of the Canadian identity—enhancing our culture and livelihoods through diversity, acceptance and appreciation. Historically, it has played an important role in shaping Canada's population into the culturally diverse mosaic it is today. Each year, Canada welcomes a combination of permanent and temporary migrants. In 2009, Canada received over 252,000 permanent residents and 178,000 temporary foreign workers.[5] According to the 2006 Census of Canada, one in five Canadians—6.2 million or 19.8%—is foreign-born.[6] Statistics Canada projections suggest that by the year 2031 as much as 25% to 28% of the population could be foreign-born.[7]

Figure 1 Immigration to Canada, 1860 to 2008



Sources: For the years 1852 to 1977: Statistics Canada. Immigrant arrivals in Canada: 1852 to 1977. Data Series A350. For the years 1978 to 2008: Citizenship and Immigration Canada. Facts and Figures 2008: Immigration Overview—Permanent and Temporary Residents. 2009, p. 3.[7]

Immigrants come to Canada for a variety of reasons. For some, it is "push factors" experienced in their country of origin that drive them to leave—such as conflict, political instability, environmental disasters or lack of economic opportunity. For others it is "pull factors," including peace, stability, job prospects, living conditions, higher wages, and better access to, or quality of, services such as education and health care.

Peaks, Lulls and Policy Changes

Immigration to Canada began in earnest in the early 1900s, when hundreds of thousands of immigrants arrived in Canada annually, peaking at over 400,000 in 1913 (see Figure 1). However, with the start of World War I in 1914, immigration levels plummeted. After the war, escalating immigration levels resumed until the Great Depression of the 1930s and World War II, when annual immigration levels fell again.

The end of the war marked the re-emergence of positive migration flows—during and after World War II, Canada welcomed 48,000 war brides and their 22,000 children.[8] Over the course of the 1950s, Canada received approximately 1.5 million immigrants from Europe. However, by 1958, immigration levels began to fall due to improving conditions in Europe, a slowing Canadian economy, and government policies that had been designed to reduce the rate of immigration.[9]

In 1962, the federal government introduced a new immigration policy that eliminated discrimination based on race, religion and national origin. Five years later, immigration policy was further amended and a points system (based on age, education, language skill and economic characteristics) was introduced. These new policy reforms made it easier for people outside of the United States and Europe to immigrate to Canada. Immigration inflows fluctuated until the mid-1980s, but became steadily heavy around 1987, when over 150,000 immigrants were accepted into Canada. Over the last two decades, immigration levels have been consistently high. Between 1990 and 2008, Canada received over four million immigrants, an average of over 229,000 people per year.[10]

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Who Is Coming to Canada?

Newcomers to Canada fall into two broad classifications, permanent residents and temporary residents. Permanent residents come to Canada with the objective of resettling, while temporary residents come to visit, study or work.

Permanent residents

The three primary categories of permanent residents, as defined by the 2001 *Immigration and Refugee Protection Act*, are **economic class immigrants, family class immigrants** and **refugees**—see *Glossary* (page 2).[11] The Act also gives Citizenship and Immigration Canada (CIC) the authority to grant permanent

resident status to individuals and families who would not otherwise qualify under any of the aforementioned categories, such as for humanitarian and compassionate considerations. Figure 2 illustrates the trends in the number of permanent residents, by category.

Temporary residents

Canada's immigration policies also provide temporary entry to **visitors** (including tourists and business visitors), **international students**, **temporary foreign workers** (TFW) and individuals in the **humanitarian population**.[12] Each of these populations provide Canada with positive externalities such as the revenue generated by tourism, the investments made by international business visitors, the mutual learning of domestic and international students, and the necessary skills needed to meet labour shortages.

A variety of programs and processes are available by which TFWs with a range of skill levels can enter and work in Canada. From 1998 to 2008, the number of TFWs entering Canada increased from 100,436 to 192,519 (an increase of 91.4%), before dropping to 178,478 in 2009.[13] Although seasonal agricultural workers (also referred to as migrant farm workers) constitute only 13.7% of all TFWs who entered Canada in 2009,[14] they are an important population to examine given the particular nature of their health challenges (see article on page 30).

A Shift in Countries of Origin

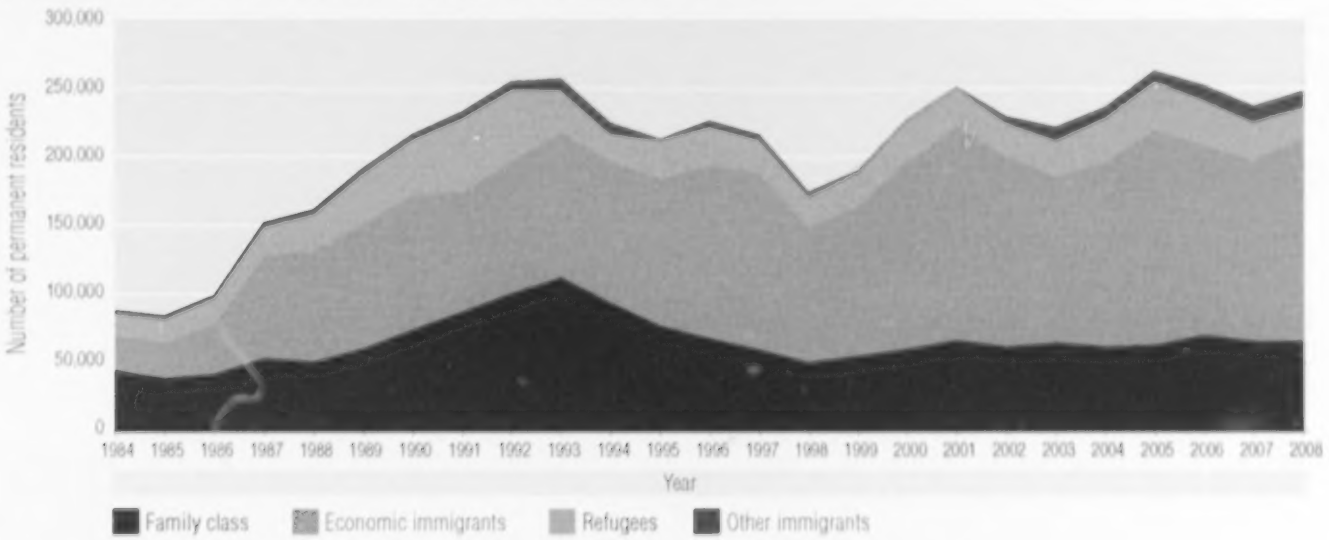
During the first half of the 20th century, the majority of immigrants coming to Canada originated from the United States, the United Kingdom and other European countries. However, over time, there have been fewer immigrants originating from the U.S. and the U.K. and more from other parts of the world, particularly Asia. China, India and the Philippines are currently the top countries of origin, and in 2008 they provided 11.9%, 9.9% and 9.6%, respectively, of immigrants to Canada.[15]

Ethnocultural diversity

The 2006 Census estimated that over five million individuals (16.2% of the Canadian population) belonged to a visible minority.*[16] Between 2001 and 2006, the visible minority population grew by 27.2%, while the total population grew by only 5.4%. The increase of the visible minority population in Canada can be attributed to the large proportion of newcomers who are a visible minority (75% of people who immigrated to Canada between 2001 and 2006),[16] as well as increases in the Canadian-born population who are the children and grandchildren of immigrants who belong to a visible minority. Recent (2008) projections by Statistics Canada indicate that the proportion of Canadians who belong to a visible minority could double by 2031.[7]

"Visible minorities as defined by the Employment Equity Act are "persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour."

Figure 2 Number of Permanent Residents, by Category, Canada, 1984–2008



Source: Citizenship and Immigration Canada. Facts and Figures 2008: Immigration Overview—Permanent and Temporary Residents. 2009, p. 6.[17]

Key Destinations Within Canada

Immigrants to Canada tend to concentrate in a few provinces and metropolitan areas.

Provinces and territories

The majority (90%) of permanent residents to Canada reside in four provinces: Ontario, Québec, British Columbia and Alberta. The top destinations for temporary workers are the same four provinces, but involve different distributions among these provinces, reflecting the locations of various employment opportunities (see Figure 3).

Metropolitan areas

The majority of immigrants to Canada choose to live in metropolitan areas. In 2006, 94.9% of Canada's foreign-born population and 97.2% of recent immigrants (those who immigrated to Canada between 2001 and 2006) lived in a metropolitan area or urban community, compared with only 77.5% of the Canadian-born population. Canada's three largest cities—Toronto, Montréal and Vancouver—were home to 62.9% of Canada's foreign-born population, compared to 27.1% of the Canadian-born population.[17]

Of the recent immigrants to Canada, 40.4% settled in Toronto, 14.9% in Montréal and 13.7% in Vancouver.[18] Other popular urban areas include Calgary, Ottawa-Gatineau, Edmonton, Winnipeg, Hamilton and London—these six metropolitan centres combined received 14.3% of recent immigrants.[19]

Among the varied reasons newcomers choose to settle where they do, the most common reason for settling in Toronto, Montréal and Vancouver is to join the social support networks of family and friends. Other top reasons for choosing a particular location include job prospects (Toronto), language (Montréal) and climate (Vancouver).[19]

Demographic Profiles

Although immigrants to Canada are not a homogeneous population, as a group they tend to differ from the Canadian-born population with respect to age distribution, languages spoken and attainment of higher education.

Immigrants are younger

Overall, recent immigrants are younger when compared with the Canadian-born population. While the proportions of recent immigrants and Canadian-born people under the age of 24 are approximately the same, people of prime working age (25 to 54 years) represent 57.3% of recent immigrants compared with 42.3% of the Canadian-born population.[20] People of older working age and seniors together comprise a smaller proportion of the total newcomer population compared with the Canadian-born population.

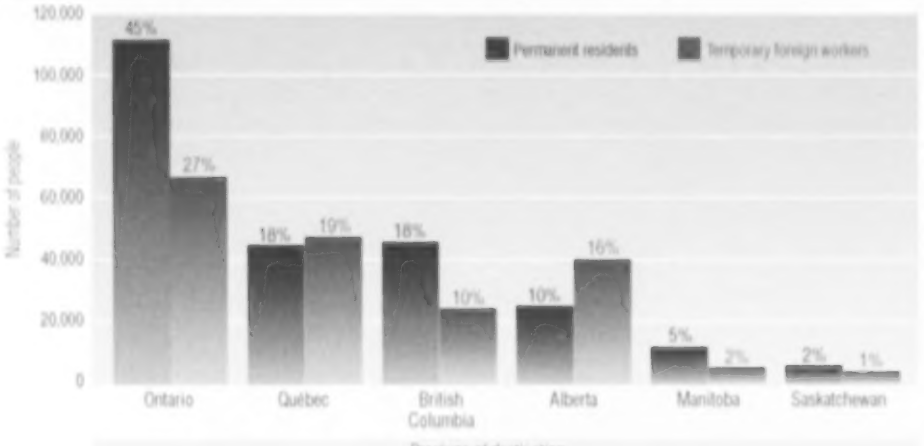
Nearly equal numbers of men and women

In the distant past, the majority of immigrants to Canada were men, but more recently women have comprised about one half of newcomers. From 2004 to 2008, nearly 52% of all permanent residents who arrived in Canada were female.[21] When examined by migrant category, the proportion of females to males is similar, except in two cases: females constitute 60% of the family class immigrants and an overwhelming 70% of the "live-in caregiver" category within the economic class.[21]

Over one quarter do not speak French or English

Almost 72% of permanent residents admitted to Canada in 2008 self-identified as having knowledge of French, English

Figure 3 Destination of Permanent Residents and Temporary Foreign Workers, 2008



Notes: Percentages are rounded for clarity of presentation.
Provinces at 1% or below (NS, NB, PEI, NL and the Territories) are not shown.

Source: Citizenship and Immigration Canada. Facts and Figures 2008: Immigration Overview—Permanent and Temporary Residents, 2009, p. 26, 62.[22]

or both official languages.[22] Nevertheless, there is a concern that language could act as a barrier to accessing health care services for the slightly more than one quarter of migrants who speak neither of Canada's official languages.

Of those who were not familiar with either English or French, 46% were the spouses or dependants of economic immigrants, 31% were from the family class and 14% were refugees.[22] Thus, these particular groups may warrant special attention in order to ensure effective integration and positive health outcomes.

As identified in the 2006 Census, almost 150 different languages were reported as the mother tongue (the first language a person has learned at home in childhood and is still understood) among Canada's foreign-born population. The most identified mother tongue language was English (25%); only 3.1% of the foreign-born reported French as their mother tongue.

Among categories of permanent residents, economic class immigrants have the highest levels of education, while refugees and residents who were admitted for humanitarian and compassionate reasons have the lowest levels.

A highly educated group

Overall, immigrants are a highly educated segment of Canada's population. As of 2006, more than three times as many recent male immigrants as Canadian-born men, and more than twice as many female recent immigrants as Canadian-born females, held at least a bachelor's degree[23] (see Figure 4). Foreign-born Canadians account for 40% of all Canadians with a master's degree and 49% of all Canadians with a doctorate degree.[24]

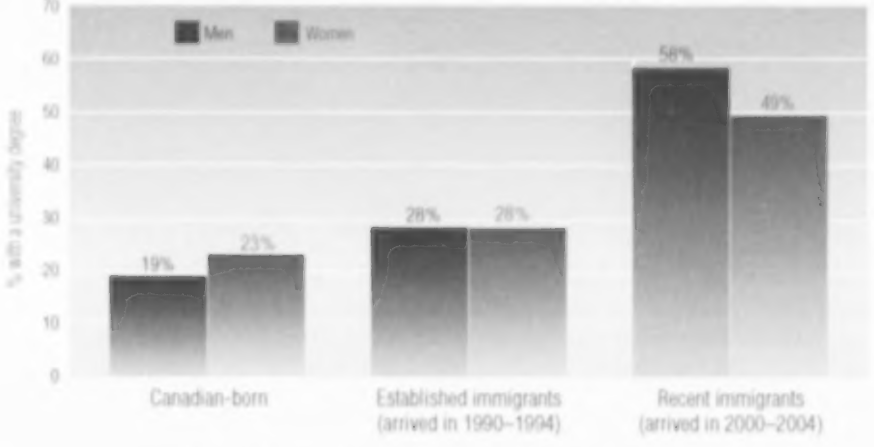
Among categories of permanent residents, economic class immigrants have the highest levels of education, while refugees and residents who were admitted for humanitarian and compassionate reasons have the lowest levels. In 2008, the majority (72.4%) of principal applicants from the economic class held at least a bachelor's degree, whereas only 11.3% of refugees had attained that level of education (three quarters of refugees had less than 13 years of education).[25]

Although immigrants exhibit relatively high levels of educational attainment, this does not necessarily translate into attaining better jobs or earning higher income. Studies have shown that the main difficulties facing immigrants to Canada in finding employment are lack of Canadian work experience, lack of contacts in the job market, lack of recognition of foreign experience and foreign qualifications, and language barriers[26] (see article on page 26).

Impacts of Immigration

As Canada continues to receive people from all around the world and bring together people of different origin, ethnicity, language and tradition, the nation continues to develop a diverse cultural foundation. Due to Canada's aging population and low birth rate, immigration plays an important role in population and economic growth. In addition, permanent and temporary workers fill significant gaps in the Canadian labour market by providing a wide range of necessary skills and services. Overall, the inflows of immigrants into Canada provide the nation with an abundance of benefits and opportunities. Given the importance of Canada's migrant population, preserving and protecting their health is essential and in everyone's best interest. ■

Figure 4 Percentage of Recent and Established Immigrants and the Canadian-Born with a University Degree, by Sex, 2006



Source: Galarneau D, Morissette R. Immigrants' education and required job skills. Statistics Canada, Perspectives, December 2008.[27]

Please note: Full references are available in the HTML version of this issue of the Bulletin: http://www.healthcanada.gc.ca/hpr-bulletin

Canada's Migration Health

Legislation and Policies: Over the Centuries

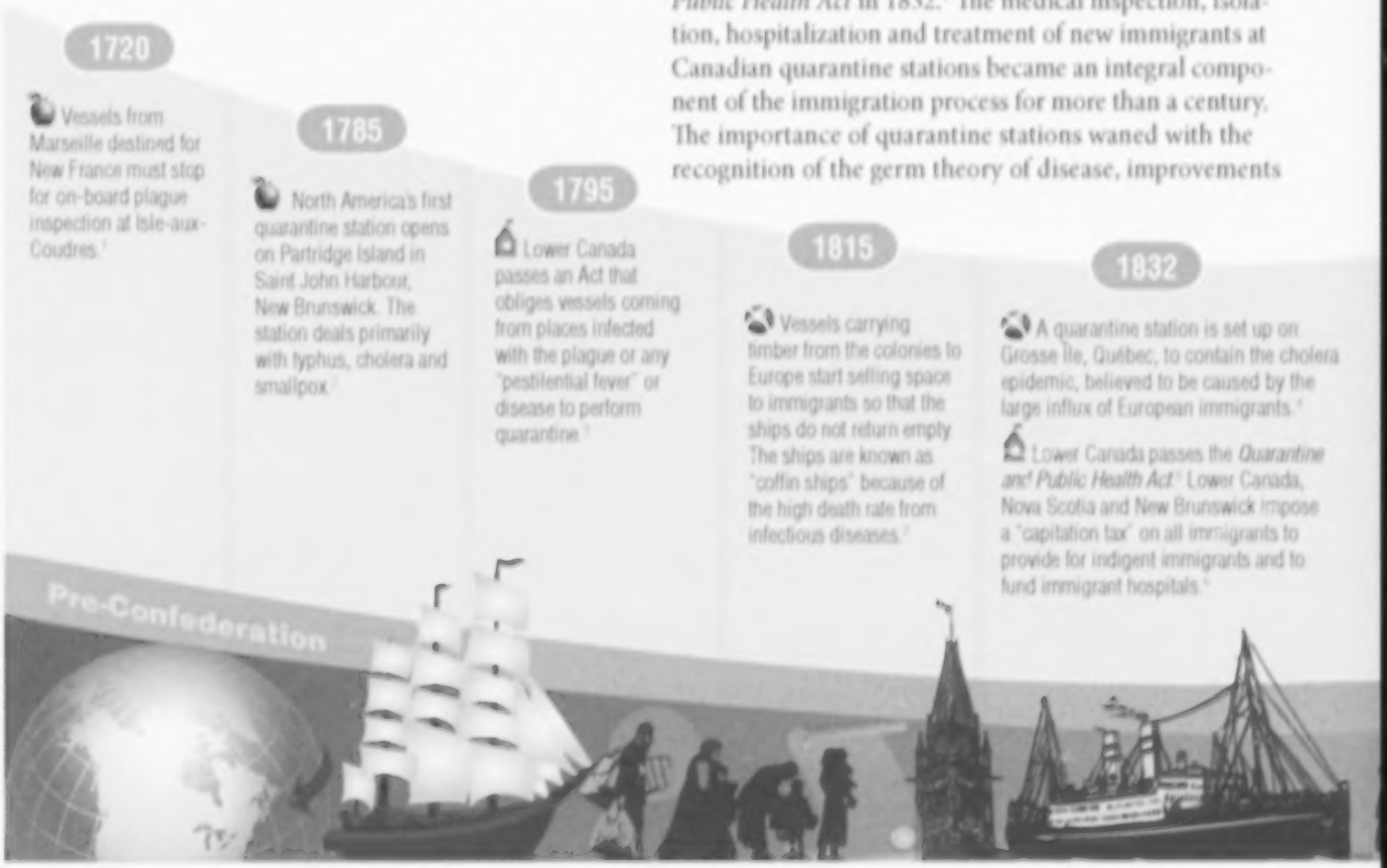
Dr. Brian Gushulak, Migration Health Consultant (former Director General, Health Management Branch, Citizenship and Immigration Canada, and former Director of Medical Services for the International Organization of Migration)

This article presents an overview of federal migration health policies and legislation, from pre-Confederation until the present. It traces their evolution, from an early focus on containing disease to the current consideration of the longer term health of migrants to Canada. It is supplemented by a timeline developed by a number of contributors. The timeline depicts the interaction of some key health ( ), immigration ( ) and legislative/policy ( ) events.

Canada's migration health legislation and practices were initially designed to prevent the spread of infectious diseases. Over time, migration health policies also came to be influenced by social and political convictions, resulting in the restriction of those who, it was believed, could negatively affect Canadian society, or who would place "excessive demands" on Canada's health and social services. By the middle of the 20th century, the focus on exclusion would evolve to include concern for the health and well-being of newcomers being admitted to the country.

Containing Disease

The threat of epidemic cholera prompted the Legislative Assembly of Lower Canada to pass the *Quarantine and Public Health Act* in 1832.[1] The medical inspection, isolation, hospitalization and treatment of new immigrants at Canadian quarantine stations became an integral component of the immigration process for more than a century. The importance of quarantine stations waned with the recognition of the germ theory of disease, improvements


1720
Vessels from Marseille destined for New France must stop for on-board plague inspection at Isle-aux-Coudres.[1]
1785
North America's first quarantine station opens on Partridge Island in Saint John Harbour, New Brunswick. The station deals primarily with typhus, cholera and smallpox.[2]
1795
Lower Canada passes an Act that obliges vessels coming from places infected with the plague or any "pestilential fever" or disease to perform quarantine.[3]
1815
Vessels carrying timber from the colonies to Europe start selling space to immigrants so that the ships do not return empty. The ships are known as "coffin ships" because of the high death rate from infectious diseases.[2]
1832
A quarantine station is set up on Grosse Île, Québec, to contain the cholera epidemic, believed to be caused by the large influx of European immigrants.[4]
Lower Canada passes the *Quarantine and Public Health Act*.[1] Lower Canada, Nova Scotia and New Brunswick impose a "capitation tax" on all immigrants to provide for indigent immigrants and to fund immigrant hospitals.[5]
Pre-Confederation

Immigration Health: Who Does What?

Enacting the legislated medical immigration selection criteria is primarily a federal responsibility, residing in Citizenship and Immigration Canada (CIC), although consultations with provincial/territorial and other stakeholders take place.

Several provinces have specific agreements with CIC that may include health components.[3,4] For specific issues such as the screening and management of tuberculosis in immigrants, consultation is provided through the Canadian Tuberculosis Committee, an advisory committee of the Public Health Agency of Canada.[5]

The migration health implications of unusual or urgent situations, such as large refugee movements, have been managed through joint processes that can extend from international to, in some cases, the municipal level.

in sanitation, and the development of immunization and antibiotics. However, to this day, quarantine remains a component of the infectious disease control toolbox.

While quarantine legislation attempted to protect the nation and its people from the consequences of epidemics, immigration legislation aimed to protect the state from the economic impacts of illness. Prospective immigrants suffering from medical conditions that were believed to impair their ability to establish or look after themselves could be denied admission; health conditions subject to these considerations included mental illnesses, blindness, deafness and the inability to speak.[2] The intent was to limit the admission of individuals who were believed likely to generate costs to the public purse through demands on sanatoria, asylums and social services.

Nation Building

During the early years of Confederation, immigration was seen as a fundamental component of nation building and this view was reflected in the *British North America Act*, now the *Constitution Act*, of 1867.

The first *Immigration Act* was passed by the Dominion Government two years after Confederation; a separate federal *Quarantine Act* was passed in 1872. These two statutes have remained separate pieces of federal legislation since that time. Further separation of immigration and quarantine practices took place in 1902, when legislative amendments created a systematic immigration medical service to deal with the exclusion of immigrants with certain non-infectious diseases.[6]

1845-1847

Large-scale Irish immigration occurs due to the Irish potato famine.[7]

1851

Twelve European states meet in Paris to develop regulations to control the cholera epidemic. Over time, international conventions are produced and become the basis of the *International Health Regulations*, which are still the only international health regulations in use today.[8]

1868

The Canadian *Quarantine Act* is the first health legislation passed by the Dominion Government.[2] It is revised four years later; the current *Quarantine Act* is substantially similar to the 1872 version.[2]

1869

The Canadian *Immigration Act* is passed and includes provisions restricting the entry of the destitute and the physically and mentally infirm.[2,9] The welfare of immigrants becomes the responsibility of the Canadian, not the British, Government.[10]

1869-1930s

The British Child Emigration Movement results in over 100,000 British children (known as "Home Children") being sent into indentured labour in Canada.[11]

1879

Legislation to control the landing of "paupers" in Canada is the first piece of Canadian legislation to exclude potential migrants, including criminals and other "vicious classes."[12]

1885

The transcontinental railway is completed. Large-scale immigration from the United States, the United Kingdom, and Northern, Central and Eastern Europe is encouraged.[13]

1902

Amendments to the *Immigration Act* lead to medical inspections being carried out at ports of entry by trained medical staff.[14]

1906

Influenced by eugenics, the *Immigration Act* is revised, expanding the class of prohibited immigrants to include persons "belonging to any race deemed unsuited to the climate or requirements of Canada."[2,9] The Act also gives the Government authority to deport immigrants within two years of landing on a number of grounds.[15]

1914

The beginning of World War I effectively halts immigration to Canada, except from the U.S.—a consequence of war, not a deliberate policy.[13]

Post-Confederation

Reflecting the importance of national agricultural development, the responsibilities for immigration and quarantine rested with the Department of Agriculture until 1892, when the Department of the Interior was formed. Responsibility for immigration health was transferred to the Department of Health when it was created in 1919.

Expanding the Criteria for Exclusion

In the early 20th century, the limited understanding of the new science of genetics was associated with concerns about the social and political consequences of migration. The principles of eugenics supported restricting the admission of those who, it was then believed, could negatively affect Canadian society. By 1910, those principles were set out in law, with prospective immigrants with health problems classified into three basic groups:

- those with a specified disease or condition that rendered them inadmissible under the *Immigration Act*
- those who were "deformed, handicapped or mentally ill"
- those with a curable disease or condition.

Immigration officers, however, had considerable discretion in applying the law and considered such factors as whether individuals in these groups were independent or part of a family, were fit for employment or had independent means of support.

Providing Health Care

Not all federal immigration health activity was related to screening. Once in Canada, people without financial means who needed immediate medical care were treated at government facilities (e.g., large quarantine stations and federal hospitals). The legislative responsibility for provision of such care was set out in the *Department of National Health and Welfare Act*.[7]

1940-1950

Approximately 48,000 war brides and their 22,000 children arrive in Canada. In the wake of World War II, Canada receives about 1.5 million immigrants from Europe.[22]

1947

Canada moves to large-scale immigration, expands family immigration and commits to meet its international humanitarian obligations to refugees. The *Chinese Immigration Act* is repealed.[23]

The country also institutes contract labour programs for specific industries (e.g., mining and logging); initially admitted as "visitors," these temporary foreign workers are later regulated under the Non-Immigrant Employment Authorization Program.[24]

1952

The *Immigration Act* is revised, permitting the Cabinet to "prohibit or limit the admission of persons by reason of nationality, ethnic group, occupation, lifestyle, unsuitability with regard to Canada's climate, and perceived inability to become readily assimilated into Canadian society." However, a high degree of discretionary power is vested in the Minister and proves invaluable in aiding desirable and/or humanitarian immigration.[25]

1957

With the crushing of the Hungarian uprising, the Canadian Government implements a special program offering Hungarian refugees free transport instead of loans. More than 37,000 are admitted in less than one year.[26]

Post-Confederation

1919

The National Department of Health is created and immigration health officers become part of that Department.[16] The *Immigration Act* is again amended, adding new grounds for denying entry and deportation (e.g., "constitutional psychopathic inferiority," chronic alcoholism and illiteracy).[17]

1923

A preference system facilitates the intake of immigrants from a list of preferred countries. Parliament passes the new *Chinese Immigration Act*, effectively excluding Chinese from immigrating to Canada.[18,19]

1925-1930

Given concerns about quality assurance, Canadian medical staff are deployed abroad, first to London then to other offices. As a result, medical refusals on landing declined from 742 in 1928 to 196 in 1930.[20]

1928

Overseas examination is required for all prospective immigrants.[21] Doctors are instructed to pay close attention to "mental deficiency and illness," epilepsy, tuberculosis or recent pleurisy, alcoholism and drug addiction.[7]

With the influx of about 1.5 million immigrants from Europe in the wake of the Second World War, the federal government extended its responsibility to pay for some medical services for immigrants, workers and refugees who arrived in Canada with insufficient resources or who had not yet reached their place of employment or their destination.[8] This program has continued, with modifications, and is now known as the Interim Federal Health Program, which ensures the provision of emergency and essential health care coverage for refugees and refugee claimants who lack financial resources.[9,10]

Modernizing the Legislation

Canada's 1974 *Green Paper on Immigration Policy*, and the consultations that followed, demonstrated the growing national commitment to a modern, rights-based approach to life and international affairs. The *Immigration Act*, enacted two years later, embraced many of the social principles and advances of the 1960s and reflected the maturity of a nation that had recognized the global complexity of migration (see sidebar, next page).

Looking Forward

The past three decades have witnessed evolutionary changes in the patterns, volume and demography of immigration to Canada. During this time, Canada's principal pieces of migration health legislation have been updated. However, as subsequent articles point out, recent research on the patterns and determinants of migrants' health highlights the need for the development of a more comprehensive framework for migration health, one which considers the underlying determinants that contribute to the longer term health of newcomers as they settle in Canada.[11,12] ■

1959

Canada's Immigration Medical Service requires that the immigrant medical exam include a chest X-ray to look for the presence of tuberculosis.[2]

1960

World Refugee Year. Canada accepts 3,500 refugees, including 325 with tuberculosis. This sets an important precedent, demonstrating Canada's willingness to put aside usual health considerations when dealing with people in need.[5,13]

1962, 1967

New regulations to the *Immigration Act* largely remove racial discrimination from Canada's immigration policy and introduce an objective "point system" for immigrant selection.[13]

1966

The Seasonal Agricultural Workers Program begins in partnership with Jamaica; other Caribbean countries and Mexico come on board in subsequent years.[27]

1969

Canada signs the *United Nations Convention and Protocol Relating to the Status of Refugees*. A key provision stipulates that a refugee should not be returned to a country in which he or she fears persecution.[2]

1971

The Government adopts a formal multiculturalism policy, encouraging a vision of Canada based on the values of equality and mutual respect with regard to race, national or ethnic origin, colour and religion.[28]

1973

The Government initiates a temporary work program for live-in caregivers; it also creates the Non-Immigrant Employment Authorization Program, which later becomes the Temporary Foreign Worker Program.[25]

1978

The 1976 *Immigration Act* comes into force, confirming in law the point system established by regulation in 1967.[29] The Act introduces the concept of "excessive demand" on Canadian health and social services. It also incorporates the UN definition of "refugee" into Canadian law.[30]

Post-Confederation

Modern Immigration Legislation

The **1976 *Immigration Act*** laid out a modern set of immigration policies that promoted Canada's demographic, economic, social and cultural goals, including non-discrimination and intersectoral collaboration. Recognizing that different classes of immigrants have different needs,[13] the Act introduced the system of classifying immigrants into major categories. The new Act also mandated medical assessments for temporary foreign workers destined for occupations where the protection of public health was deemed to be important.

Blanket refusals for specific populations were removed and individual assessments of all cases were now required. As a result, individuals with certain infectious diseases could be admitted with a requirement to report to provincial/territorial health authorities. This process of notification and reporting became known as "public health surveillance" and continues to this day.

In the context of the then relatively new Canadian universal health care system, the Act also significantly revised the historical concept of dependency on the state for the treatment of chronic health conditions. Legislators considered the necessity to mitigate the potential impact of large numbers of new arrivals with serious illnesses on health and social services (i.e., excessive demand).

The **2001 *Immigration and Refugee Protection Act*** (IRPA) further defined the concept of "excessive demand" by determining a financial threshold, whereby potential immigrants were now evaluated in terms of a defined dollar cost cutoff.[14] The IRPA also included amendments that exempted the application of excessive demand provisions for refugees and some members of immigrant families, such as children and spouses. The legislation retained the generic definitions of "danger to public health and safety."

1979

Sixty thousand refugees from Vietnam, Laos and Cambodia are resettled in Canada. Thousands of Canadians come forward to welcome them, giving a dramatic launch to the new Private Sponsorship of Refugees Program.[26]

1988

Multiculturalism policy becomes law when Parliament passes the Canadian *Multiculturalism Act*.[31]

Please note: Full references are available in the HTML version of this issue of the Bulletin: http://www.healthcanada.gc.ca/hpr-bulletin

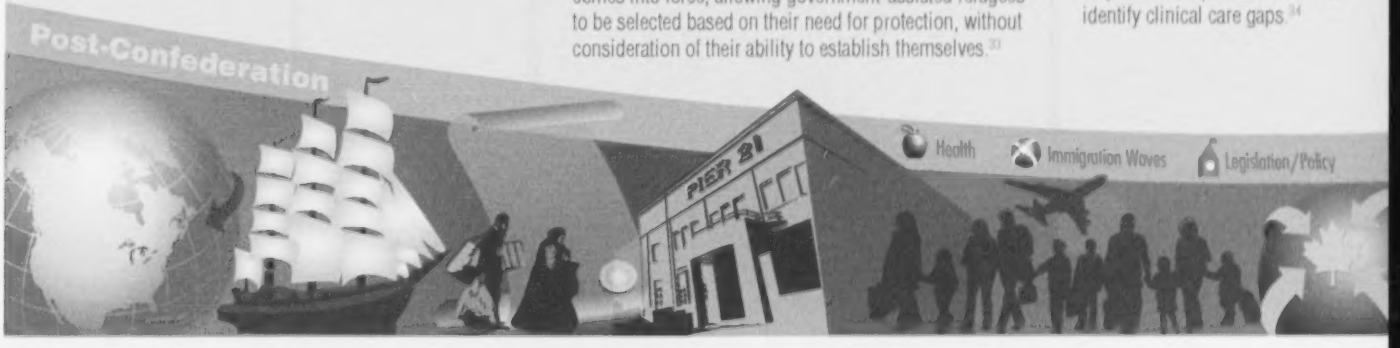
2002

Routine HIV testing is introduced as part of the Immigration Medical Evaluation; on the advice of Health Canada, the presence of HIV infection does not warrant routine refusal of admission on the grounds of the person being a danger to public health.[32]

The 2001 *Immigration and Refugee Protection Act* comes into force, allowing government-assisted refugees to be selected based on their need for protection, without consideration of their ability to establish themselves.[33]

2010

Twenty high-priority health conditions affecting immigrants and refugees are selected by Canadian primary care practitioners for clinical guideline development, using criteria that emphasize inequities in health to identify clinical care gaps.[34]



The Healthy Immigrant Effect: A Temporary Phenomenon?

Ilene Hyman, PhD, Dalla Lana School of Public Health and Cities Centre, University of Toronto, and **Beth Jackson, PhD**, Strategic Initiatives and Innovations Directorate, Health Promotion and Chronic Disease Prevention Branch, Public Health Agency of Canada

When immigrants first arrive in Canada, their health status is often superior to the Canadian-born population—a phenomenon known as the "healthy immigrant effect." However, there is growing evidence that immigrants lose this health advantage over time. Based on a review of the literature commissioned by the Public Health Agency of Canada, this article presents evidence of the healthy immigrant effect and its subsequent decline; it also explores the implications of these changes for research and policy.

A review of the literature on the health of immigrants to Canada shows that recent immigrants enjoy a health advantage over long-term immigrants and the Canadian-born population, an advantage that disappears over time.[1,2] The healthy immigrant effect has been observed in other high-income countries including Australia, the United States and the United Kingdom.[3-4,5]

The healthy immigrant effect is believed to result from, in part, a self-selection process in which people who are able and motivated to move do so, while those who are sick or disabled, or who reside in institutions, do not. It is also the result of immigration procedures that exclude immigrants with serious medical conditions and that select immigrants with higher education, language ability and job skills. The latter characteristics facilitate social and economic integration and are associated with good health.

Examining the Evidence

Three types of research studies contribute evidence about the healthy immigrant effect. **Migrant studies** rely on epidemiological methods and are used to compare health outcomes among natives of the country of origin, migrants and natives of the country of adoption. While ideal, such studies are costly. **Population studies** collect data on the health of the host population and are used to make comparisons between recent immigrants, non-recent immigrants and native-born groups. These surveys are typically cross-sectional and are therefore inadequate for examining changes over time. Consequently, longitudinal surveys and data linkages with administrative databases are emerging as more suitable options (see *Using Canada's Health Data* on page 47). **Generational studies** compare health outcomes between foreign-born and native-born members of a particular ethnocultural group. Such studies may not be possible for some newcomer communities, as data are not yet available.

The healthy immigrant effect has been observed in studies comparing mortality rates of immigrants with the Canadian-born population, as well as in those comparing measures of self-reported health. Findings further suggest that the healthy immigrant effect is more pronounced for chronic conditions (e.g., heart disease, arthritis and diabetes) than for self-reported health. However, the health advantage of immigrants with respect to chronic diseases is not applicable to

infectious diseases. (Two infectious diseases that are particularly relevant to immigrants, TB and HIV/AIDS, are discussed in the article on page 33.)

Mortality rates

Studies have shown that mortality rates among recent immigrants are substantially lower than among the Canadian-born population; however, they increase over time to approximate those of the host country.[6,7] For example, when data from a sample of Canadian immigrants and refugees who landed between 1980 and 1990 were linked to the Canadian Mortality Database, DesMeules et al.[8] found that recent immigrants experienced a lower **all-cause mortality rate** compared with the Canadian-born population, but that these rates increased with length of stay.

When studying **disease-specific mortality rates**, however, researchers have found that certain mortality rates were *higher* among immigrants than among the Canadian-born population, for example, stroke, infectious diseases and certain cancers. There was also considerable heterogeneity by immigration status. For example, while refugees experienced an increased risk of mortality compared with immigrants, their risk did not increase with the length of stay. These findings raise questions as to which aspects of migration and resettlement contribute to the variation in mortality outcomes.

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Self-reported health

Data from the National Population Health Surveys conducted between 1994 and 2001 were used to compare changes in self-reported health status in recent and non-recent immigrants to Canada and the Canadian-born population. Self-assessed health status was categorized as excellent, very good, good, fair or poor. While there was an increase over time in the proportions of all three population groups who reported fair or poor health, this increase (i.e., deterioration of health status) was most dramatic for the older (pre-1970) arrival cohort, followed by the more recent immigrants (those who arrived between 1990 and 1994) (see Figure 1). The Canadian-born respondents reported the smallest increase in self-reported fair or poor health over time.

The immigrant sub-groups observed to be at the highest risk of transitioning to poor health included seniors, women, low-income immigrants, and recent immigrants who were members of a racialized group.[9,10,11] This suggests that the trend to declining health status is not universal to all immigrants, and that program and policy responses should adopt a diversity and equity analysis to enable sensitivity to the variation among immigrant groups. Data from the Longitudinal Survey of Immigrants to Canada (LSIC) have also shown a substantial deterioration in immigrant self-reported health status over the four years following arrival.[11]

Evidence Strongest for Chronic Diseases

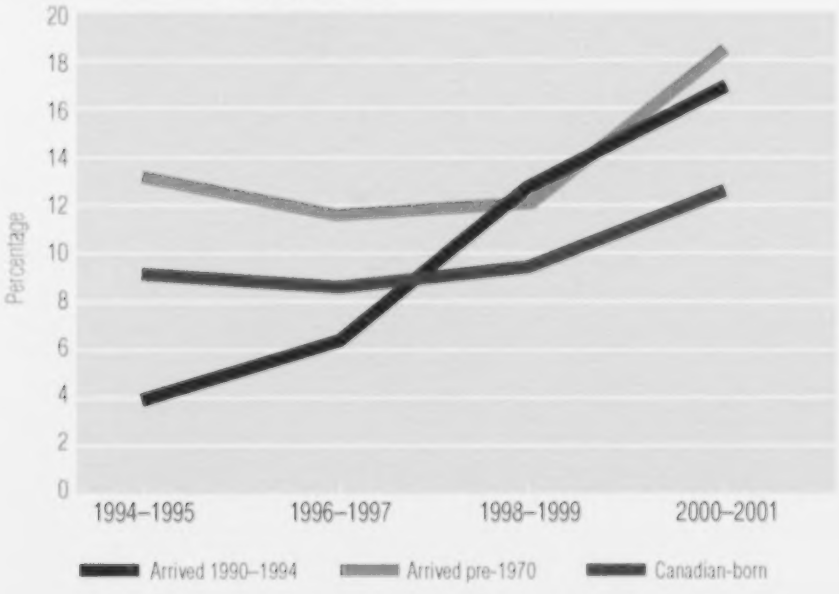
While the literature overall shows evidence of the healthy immigrant effect with respect to chronic diseases, it also shows considerable variation across different types of chronic disease. Variations have also been observed by age, gender, country of origin and length of stay in Canada.

Increases in the rates of certain cancers

Consistent with the healthy immigrant effect, immigrants experience a lower risk of cancer compared to the Canadian-born population.[12] However, studies indicate that cancer prevalence and mortality rates among immigrants to Canada change following migration.[7,8,13] Of particular concern are rates of prostate and breast cancer and Hodgkin's lymphoma that increase following migration. Generational studies show that second-generation immigrants experience a cancer risk somewhere between that of immigrants and their native-born children, and that the risk increases over several generations.

There is some evidence of differences in cancer rates and mortality by country/region of origin. In Asian immigrant communities cancer incidence rates are generally lower than in the Canadian-born population,[14,15] with some exceptions (e.g., liver, nasopharyngeal and cervical cancers).[12]

Figure 1 Proportion of Canadian-Born Population and Immigrants Reporting "Fair" or "Poor" Health, by Arrival Cohort



Source: Newbold KB. Self-rated health within the Canadian immigrant population: Risk and the healthy immigrant effect. Social Science and Medicine, 2005.[11]

Variations within heart disease

The healthy immigrant effect is clearly demonstrated in the case of heart disease. Although recent immigrants to Canada exhibit lower rates of heart disease mortality compared with their Canadian-born counterparts,[17,18] immigration from low- to high-income/Western countries is associated with an increased risk of heart disease which, over time, may surpass that of the host population.[19] Lear et al.[20] found that immigrants had lower rates of atherosclerosis, a major risk factor for cardiovascular disease, but that these rates increased over length of stay; after 20 years in Canada, they surpassed rates in the Canadian-born.

Although immigrants overall (regardless of length of stay in Canada) have lower rates of heart disease mortality compared with the Canadian-born population, important differences have been observed by gender and ethnicity. Some ethnic groups in Canada show striking differences in their cardiovascular risk profiles.[21] For example, South Asians, particularly women, have been found to experience increased rates of hypertension with increasing length of stay in Canada.[22,23] These findings suggest the need for more research to understand both genetic predisposition and changes in determinants of heart disease among immigrant sub-groups.

Type 2 diabetes on the rise

Studies suggest that the prevalence of type 2 diabetes is increasing among Canadian immigrants;[24] they also show that ethnic differences are pronounced.[25] Recent immigrants and refugees from South Asia, Latin America, the Caribbean and sub-Saharan Africa have been found to have a two to three times greater risk of developing type 2 diabetes than those from western Europe or North America.[26] Moreover, this elevated risk begins earlier in life (i.e., from 20 to 40 years of age), compared with European and North American immigrant populations who tend to develop the disease at a somewhat older age (i.e., between 35 to 49 years of age). The risk was found to be equivalent or higher in women compared with men.[26]

These observations raise questions about why some immigrant populations are at an increased risk of developing type 2 diabetes and what contributes to this vulnerability. Obesity is a major risk factor for this disease; several studies have shown that immigrants to Canada experience weight gain,[27] but that changes in body weight are not experienced equally by all immigrant sub-groups.[28]

Mental Health—A Paradox

Arrival and resettlement in a new country often involves a period of significant readjustment and stress.[29] The literature suggests that, despite this, Canadian immigrants initially experience fewer mental health problems than their Canadian-born counterparts, once again demonstrating the healthy immigrant effect. For example, Malenfant[30] found that suicide rates (often used as an indicator of immigrant mental health) in all foreign-born migrants were approximately half those of the Canadian-born population (see Figure 2); gender differences were also less pronounced. Ali found that the risk of experiencing depression and anxiety was lower for recent immigrants (who had been in Canada for less than 10 years) compared with both non-recent immigrants (10+ years) and the Canadian-born population.[31] Findings from the *Refugee Resettlement Project* found that,

after an initial risk period, refugee mental health improved over time; this improvement often continued into the second generation, although rates of post-traumatic stress disorder (PTSD) tended to persist.[32,33] Several studies have found that, despite living in poverty, immigrant and refugee children and youth experience better mental health than their Canadian-born counterparts.[34,35,36,37]

Not all mental health studies are positive, highlighting the need to consider critical intersections with length of stay, ethnicity, racialized status, age, gender and migration status. For example, the literature has shown increasing rates of mental health problems with length of stay in Canada.[31,38] When Kliewer and Ward investigated suicide rates among 25 immigrant groups, they found evidence of convergence with suicide rates of the Canadian-born population.[39] Rates of mental illness were more prevalent among Chinese and Taiwanese immigrants than the Canadian-born population, particularly among seniors.[40,41] Among Ethiopian immigrants to Toronto, the risk of developing depression increased after a few years and reached its maximum at approximately 15 years post-migration.[42]

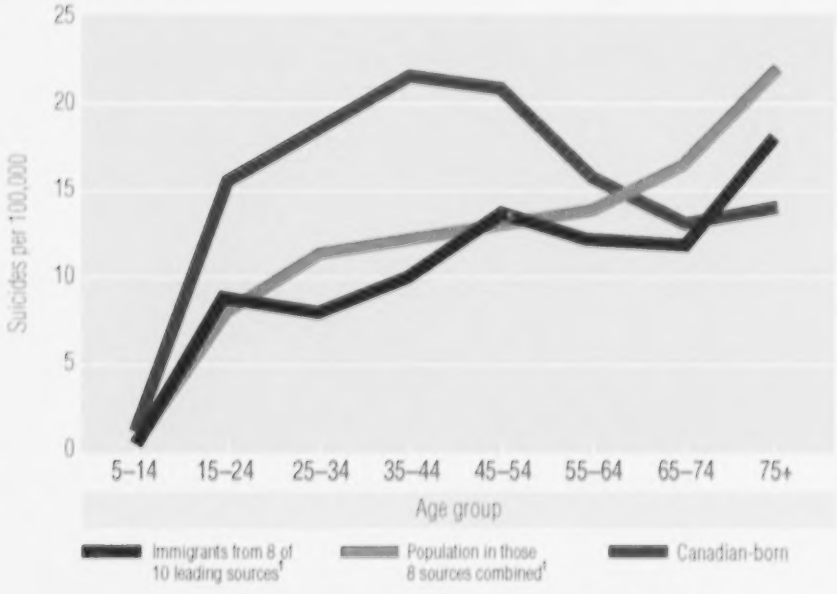
Additionally, Smith et al. found that female low-income, non-recent immigrants were four times as likely to experience depression compared with their male counterparts;[43] this is twice the magnitude of the difference in depression rates between female and male Canadian-born persons.

Summary of Findings

Evaluating evidence on the patterns of migrant health is challenging for two reasons: there is a dearth of data on migrants to Canada other than permanent residents in major Canadian databases; and the migrant population is very heterogeneous. Nevertheless, the findings on the patterns of health experienced by immigrants and refugees to Canada may be summarized as follows:

- Canadian immigrants, particularly recent immigrants, experience a physical and mental health advantage compared with their Canadian-born counterparts.[11]
- This health advantage tends to decrease after arrival. For example, immigrant mortality rates[45] and the rates of certain chronic diseases (e.g., several cancers, heart disease, type 2 diabetes, obesity) increase over time spent in Canada.[7,8,14,23,24,46,47]
- Certain immigrant sub-groups, such as seniors (aged 65+), women, low-income and members of racialized groups, are at a higher risk of transitioning to poor health than others.[9,10,11,48]
- While there is evidence of an initial mental health advantage, there are significant variations by gender and socioeconomic status, with female, low-income immigrants generally being at greater risk than their male counterparts.[43]
- Refugees are generally not as healthy as those who migrate voluntarily. Documented health problems include an increased risk of mortality, infectious diseases and mental health problems.[31,34,36,49,50,51]

Figure 2 Age-Standardized Suicide Rates for Immigrants from 8 of 10 Leading Sources, Populations in Those 8 Sources and Canadian-Born Population, mid-1990s



[1] United Kingdom, Italy, United States, Hong Kong, People's Republic of China, Poland, Germany, Portugal
Data sources: Canadian Vital Statistics Data Base; 1996 Census of Population; World Health Organization.

Do Changes in Health Behaviours Contribute to Health Status Declines?

It has been hypothesized that the adoption of health risk behaviours such as smoking, heavy drinking and the consumption of a high-fat diet may explain the decline in immigrants' health status. However, this is not borne out by the literature. It appears that changes in health behaviours are not linear among immigrants, and that they vary greatly by gender, age, length of stay and source country.[37] For example, studies have shown that recent immigrants from non-European countries are less likely to use addictive substances (e.g., tobacco, illicit drugs, alcohol) than those from European countries. Of utmost concern is the fact that the prevalence of several addictive behaviours is higher among second-generation immigrants.[37,53] Also, recent immigrants are less likely to engage in physical activity than the Canadian-born population.[9,52,54] Regular physical activity is critical to the prevention and management of type 2 diabetes and to the maintenance of overall good health.

Implications: Mitigating Health Declines

As the research shows, the relative good health of immigrants upon arrival in Canada is not a guarantee of good health in the long term. On the contrary, studies show that deteriorating health becomes a reality for many immigrants. Not all immigrant groups, however, are at the same risk of transitioning to poorer health. Some groups experience a higher risk than others, highlighting the need to examine critical intersections with age, gender, ethnicity, racialization, socioeconomic status and geography. Understanding the reasons underlying these disparities in health declines is an important research goal and a stepping stone to taking action to mitigate the resulting health inequalities.

Ensuring the continued good health of first- and second-generation immigrants and their families is also an important goal. Immigrants to Canada play an increasingly important role in the country's economic and population growth and, as the article on page 7 points out, 19.8% of the population was foreign-born in 2006; a figure that is projected to rise to 25%–28% by 2031.[55]

Ensuring the continued good health of first- and second-generation immigrants and their families is also an important goal. Immigrants to Canada play an increasingly important role in the country's economic and population growth.

Research on the determinants of immigrants' health is helping to explain why some immigrant groups are at greater risk of declining health than others (see article on page 26). In looking at the determinants of health of any population group, it is important to recognize that health and well-being result from the complex interplay of determinants that operate at the **macro-level** (e.g., government policies, societal sociocultural factors), the **community-level** (e.g., characteristics of the physical environment, neighbourhood cohesion, access to services), and the **individual-level** (e.g., personal health behaviours, income and social status, education, employment). For example, studies showing changes in personal health behaviours among immigrants to Canada (see sidebar above) must be considered in the context of community- and societal-level factors (e.g., access to healthy food options and recreational opportunities) that can either facilitate or constrain the adoption of risky health behaviours.

Additional determinants—related to the process of travel and migration—also play a role in determining post-migration health outcomes.[56] These include **pre-movement factors** such as the disease patterns and sociocultural factors of the country of origin, **movement factors** such as the type and duration of migration, and **arrival factors** including the economic, legal and cultural characteristics of the host community.

The complex interplay of all of these determinants—those affecting all Canadians as well as those unique to mobile populations—has an influence on the changes in health status that immigrants experience after their arrival in Canada. Understanding the determinants and their interconnections is helping to identify where and how interventions can best be targeted to mitigate the decline in the healthy immigrant effect that many immigrant groups are experiencing. ■

Please note: Full references are available in the HTML version of this issue of the Bulletin: http://www.healthcanada.gc.ca/hpr-bulletin

Spotlight on Research

Chronic Disease Patterns for Immigrants to Canada:

A Recent Data Analysis

Marisol T. Betancourt and **Karen C. Roberts**, Centre for Chronic Disease Prevention and Control, Health Promotion and Chronic Disease Prevention Branch, Public Health Agency of Canada

For this issue of the Bulletin, analysts at the Public Health Agency of Canada conducted an analysis of the 2007–2008 Canadian Community Health Survey (CCHS) in which they looked at the prevalence of chronic diseases and conditions among the foreign-born and Canadian-born.

A total of 22.2% of the respondents to the 2007–2008 CCHS survey were identified to be immigrants. Immigrant status ("yes" or "no") was determined by creating a variable derived from three of the survey's questions: "Were you born a Canadian citizen?", "In what country were you born?", and "In what year did you first come to Canada to live?" While immigrants' length of stay in Canada was determined by subtracting the interview date from the immigration date, specific immigrant categories could not be ascertained from the data.

Immigrants Less Likely to Report Chronic Diseases

Overall, immigrants were 40% less likely (odds ratio [OR] of 0.6) than Canadian-born individuals to report having at least one of the following seven chronic diseases: arthritis, cancer, diabetes, heart disease/stroke, a chronic respiratory disease, a chronic disease of the digestive system, or a mood disorder/anxiety (see Table 1). This health advantage was also observed for obesity and overweight—immigrants were 30% less likely to be obese or overweight than Canadian-born.

When these diseases were analyzed individually, the following disparities came to light (see Table 2):

- Immigrants were 20% more likely (OR: 1.2) to report having diabetes than Canadian-born.
- There were no significant differences between immigrants and Canadian-born with respect to self-reported heart disease/stroke or high blood pressure.
- Immigrants were 20% to 50% less likely to report having arthritis/rheumatism, a chronic disease of the digestive system, cancer, mood disorders/anxiety, or chronic obstructive pulmonary disease (COPD)/asthma than Canadian-born.

Health Advantage Decreases Over Time

Recent immigrants, defined as living in Canada for five years or less, were 60% less likely than Canadian-born to report having at least one of the seven chronic diseases analyzed here. This health advantage narrowed to 30% for immigrants who had been in Canada for more than five years (see Table 3A).

Recent immigrants were 60% less likely than Canadian-born to be obese or overweight; this advantage narrowed to 20% for immigrants who had been in Canada for more than five years. Although recent immigrants were 30% less likely than Canadian-born to report high blood pressure, this advantage was not observed for immigrants who had lived in Canada for more than five years (see Table 3B).

Recent Immigrants are Healthier

Immigrants who had lived in Canada for more than five years were 50% more likely than recent immigrants to report having at least one of the seven chronic diseases noted earlier. This pattern held true for most chronic diseases. Compared with recent immigrants, immigrants who had lived in Canada for more than five years were:

- 60% more likely to report having mood disorders/anxiety
- more than twice as likely to report having cancer or arthritis
- 70% more likely to report having diabetes
- 60% more likely to report having a chronic disease of the digestive system.

In addition, those who had lived in Canada for more than five years were 70% more likely than recent immigrants to be obese or overweight based on self-reported height and weight, and 40% more likely to report having high blood pressure.

Table 1: Prevalence and Odds Ratios of at Least One Chronic Disease,* All Immigrants Compared with Canadian-Born (Reference Population)	Mean age in years (range)	Crude prevalence, % (95% CI)†	OR** (95% CI)†
All immigrants	46.8 (12–101)	34.4 (33.3–35.5)	0.6 (0.6–0.7)
Canadian-born	42.2 (12–103)	39.9 (39.4–40.3)	1.0

Table 2: Prevalence and Odds Ratios of Chronic Diseases and Conditions, All Immigrants Compared with Canadian-Born (Reference Population)	Crude prevalence, % (95% CI)† All immigrants	Crude prevalence, % (95% CI)† Canadian-born	OR** (95% CI)†
Arthritis/rheumatism	15.0 (14.2–15.7)	15.2 (14.9–15.5)	0.8 (0.7–0.8)
Cancer (has or has ever had cancer)	5.1 (4.7–5.5)	6.3 (6.1–6.5)	0.6 (0.6–0.7)
Diabetes (types 1 and 2)	7.5 (6.8–8.1)	5.3 (5.1–5.5)	1.2 (1.1–1.4)
COPD§§/asthma	6.4 (5.9–6.9)	11.1 (10.8–11.4)	0.5 (0.5–0.6)
Heart disease/stroke	5.9 (5.4–6.5)	5.4 (5.2–5.6)	0.9 (0.8–1.0)
Mood disorders/anxiety***	6.7 (6.2–7.2)	10.6 (10.3–10.9)	0.6 (0.6–0.7)
Chronic diseases of the digestive system§	5.3 (4.9–5.7)	7.2 (7.0–7.5)	0.7 (0.6–0.7)
Chronic condition: Obesity or overweight††	45.6 (44.3–46.9)	52.8 (52.3–53.3)	0.7 (0.7–0.8)
Chronic condition: High blood pressure	18.3 (17.4–19.1)	15.5 (15.3–15.8)	1.0 (0.9–1.0)

Table 3A: Prevalence and Odds Ratios of at Least One Chronic Disease,* Immigrants (by Length of Time in Canada) Compared with Canadian-Born (Reference Population)	Mean age, years (range)	Crude prevalence, % (95% CI)†	OR**(95% CI)†
Immigrants ≤5 years in Canada	32.8 (12–87)	15.0 (12.8–17.2)	0.4 (0.3–0.5) E‡
Immigrants >5 years in Canada	49.6 (12–103)	38.2 (37.0–39.4)	0.7 (0.6–0.7)
Canadian-born	42.2 (12–103)	39.9 (39.4–40.3)	1.0

Table 3B: Prevalence and Odds Ratios of Overweight/Obesity and High Blood Pressure in Immigrants (by Length of Stay in Canada) Compared with Canadian-Born (Reference Population)	Crude prevalence, % (95% CI)†	OR** (95% CI)†
Chronic conditions: Obesity or overweight††		
Immigrants ≤5 years in Canada	28.9 (25.9–31.9)	0.4 (0.4–0.5) E‡
Immigrants >5 years in Canada	48.6 (47.2–50.0)	0.8 (0.7–0.8)
Canadian-born	52.8 (52.3–53.3)	1.0
Chronic conditions: High blood pressure		
Immigrants ≤5 years in Canada	5.4 (4.0–6.8) E‡	0.7 (0.6–0.9) E‡
Immigrants >5 years in Canada	20.8 (19.8–21.8)	1.0 (0.9–1.1)
Canadian-born	15.5 (15.3–15.8)	1.0

Legend

**At least one of the following seven chronic diseases: arthritis, cancer, diabetes, chronic respiratory diseases, heart disease/stroke, mood disorders/anxiety, and chronic diseases of the digestive system.*
***Odds ratios (OR) were adjusted for age and sex.*
****Mood disorder such as depression, bipolar disorder or dysthymia; anxiety disorders such as phobia, obsessive-compulsive disorder or a panic disorder*
† CI = confidence intervals
†† Estimated from self-reported height and weight
§ Crohn's disease, ulcerative colitis, irritable bowel syndrome, bowel incontinence or intestinal/stomach ulcers
§§ Bronchitis or emphysema
‡E = Data with a coefficient of variation from 16.6%–33.3%; therefore, these data should be interpreted with caution.

Details about the analysis methods, as well as tables showing more detailed results, are available in the references in the HTML version of this issue of the Bulletin: http://www.healthcanada.gc.ca/hpr-bulletin

Spotlight on Research

The Mental Health and Well-Being of Recent Immigrants

Anne-Marie Robert and **Tara Gilkinson**, Research and Evaluation Branch, Citizenship and Immigration Canada

Results from a study of recent immigrant outcomes in the first four years after arrival in Canada provide a snapshot of mental health by immigrant category as well as by other health determinants.

Immigration is a profound life transition that is often accompanied by a variety of stressors that may impact the mental health and well-being of immigrants.[1] The World Health Organization (WHO) defines mental health as a "state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community."[2] Mental health is a significant and necessary component to overall good health and quality of life. Good mental health is defined not only by the absence of mental disorders and problems, but also by the presence of various coping skills such as resilience, flexibility and balance.[3]

About the Study

Citizenship and Immigration Canada's Research and Evaluation Branch recently undertook a study to evaluate the factors associated with mental health outcomes of recent immigrants to Canada. The data source was Statistics Canada's 2005 Longitudinal Survey of Immigrants to Canada (LSIC). The target population of the LSIC includes permanent residents who arrived in Canada between October 2000 and September 2001, and who were 15 years of age or older at the time of arrival. Respondents were interviewed at six months (Wave 1), two years (Wave 2) and four years (Wave 3) following arrival. (For more information about the LSIC, please visit: www.statcan.gc.ca/imdb-bmdi/4422-eng.htm.)

The dependent variables in the regression analysis (emotional health and stress level) were based on responses to two questions on the LSIC. The "emotional health" variable was developed using a survey question that looked at those who had experienced any emotional problems (e.g., persistent feelings of sadness, depression, loneliness) since the last interview, and those who had not had such experience. The "stress level" indicator was categorized using self-reported levels of stress on most days: being stressed (i.e., very/extremely stressful) or not being stressed (i.e., not at all/not very/a bit stressful).

Limitations

Although the LSIC allows for analysis by immigrant sub-groups (e.g., refugees, skilled workers—principal applicants, skilled workers—spouses and dependants, and family class immigrants), it does not allow for comparisons between the immigrant and Canadian-born populations. Nonetheless, other research in this area has shown evidence of an initial mental health advantage among recent immigrants to Canada (see article on page 17). Also, due to inconsistencies in the wording of the emotional health question, and the absence of the question about stress in Wave 1, data are only presented for Waves 2 and 3.

Outcomes Are Varied

Overall, the prevalence of emotional problems in immigrants was about 30% at Wave 2, and slightly lower (29%) at Wave 3, with prevalence of high stress levels at 13% at Wave 2 and 16% at Wave 3. Other general findings include:

- Female immigrants showed a higher prevalence of emotional problems at both waves (33% compared with approximately 25% for males).
- Immigrants from North America, the United Kingdom and Western Europe reported the lowest levels of emotional problems (17%), and the lowest levels of stress (9% at Wave 2, 13% at Wave 3), compared to those from other regions. Immigrants from Central or South America, and Africa and the Middle East reported the highest levels of stress (approximately 33%) for both waves.
- Refugees exhibited the highest levels of emotional problems (36%) and family class immigrants the lowest levels (25%).

- Skilled workers—principal applicants reported the highest levels of stress (16% at Wave 2, 19% at Wave 3) and family class immigrants the lowest (8% at Wave 2, 12% at Wave 3).

A Closer Look . . .

Logistic regression results suggest that sex, immigrant category, income quartile, region of origin and perceptions of the settlement process are associated with prevalence of emotional problems and/or high stress levels.

. . . by sex

- Females were more likely to report experiencing emotional problems than were males. According to the WHO, gender is a critical determinant of mental health outcomes: women experience sexual and domestic violence, depression, anxiety and psychological distress to a larger extent than men.[4]
- Older male immigrants were less likely than younger males to report emotional problems (this was not the case for females).
- Female immigrants from South and Central America were more likely to report emotional problems than were females from the Asia and Pacific region.

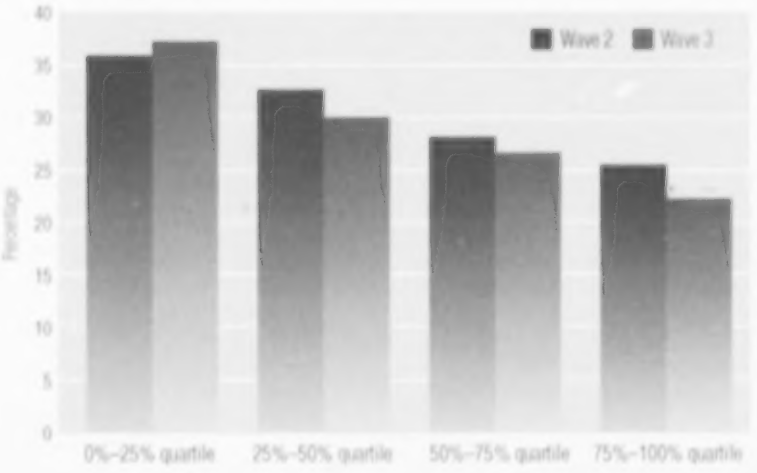
. . . by immigrant category

- Immigrant category was found to be associated with the prevalence of emotional problems and high stress levels; refugees were significantly more likely than family class immigrants to experience emotional problems and high stress levels. This is consistent with other research based on findings from the LSIC which indicates that refugees were more likely to report being in poor health compared with other immigrant sub-groups.[5]

. . . by level of income

- Lower income immigrants were more likely to report emotional problems (see Figure 1) and high levels of stress. Recent immigrants in the two lowest income quartiles were significantly more likely to report experiencing high levels of stress and emotional problems compared with those in the highest income quartile. Notably, 79% of the refugee population was found to be more highly concentrated in the two lowest income quartiles, compared to 49% of immigrants in other sub-groups.

Figure 1 Percentage of Recent Immigrants Reporting Emotional Problems, by Income Quartile



Source: Statistics Canada, Longitudinal Survey of Immigrants to Canada, 2005.

. . . by perceptions of settlement

- Evidence from the LSIC suggests that recent immigrants' perceptions of the settlement process were significantly related to emotional problems and well-being. Immigrants who were "neither satisfied nor dissatisfied" or "dissatisfied" with the settlement process were more likely to report experiencing emotional problems and high stress levels than those who were "satisfied."

Moving Forward

Findings from this report contribute to our knowledge of disparities in mental health outcomes among recent immigrants. Evidence from the LSIC has shown that immigrant mental health and well-being is associated with a variety of socioeconomic integration outcomes. Results from this report also indicate that refugees may be at a greater mental health risk compared with other immigrant sub-groups. The findings highlight the need for the Government of Canada's continued support of settlement services specifically directed to meet the needs of the refugee population. Further research into the mental health outcomes of Canada's refugee population is also required to inform the development of policies and programs directed to meet the needs of this group. ■

Please note: Full references are available in the HTML version of this issue of the Bulletin: http://www.healthcanada.gc.ca/hpr-bulletin

Social Determinants of Immigrant Health in Canada:

What Makes Some Immigrants Healthy and Others Not?

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What makes immigrants in Canada sick? Conversely, what keeps them healthy? The determinants that influence immigrants' health over time are as varied as the social circumstances of their lives, but are largely related to resettlement, adaptation and social integration. This article discusses some of the key social determinants affecting immigrants, and shows that many of them are sensitive to policy interventions.

The physical and mental health needs and experiences of a young refugee mother attending her first English language class, a temporary foreign worker injured on the job, and a senior foreign-trained professional seeking suitable employment are vastly different. However, for all immigrants, the most important aspects of their social lives that keep them healthy also contribute to their adaptation and social integration in Canada.

As we have already seen (see article on page 17), when immigrants first arrive in Canada they tend to be healthier than the Canadian-born population, but their health tends to deteriorate over time. The question is: what is causing declining health among recent immigrants to Canada?

Population Health and Social Determinants of Immigrants' Health

Population health is a "conceptual framework for thinking about why some populations are healthier than others as well as the policy development, research agenda, and resource allocation that flow from this framework."[1] Health Canada has stated that "the overall goal of a population health approach is to maintain and improve the health of the entire population and to reduce inequalities in health between population groups."[2] In 1997, the Federal/Provincial/Territorial Advisory Committee on Population Health stated, "As an approach, population health focuses on interrelated determinants that influence the health of populations over the life course, identifies systematic variations in their patterns of occurrence, and applies the resulting knowledge to develop and implement policies and actions to improve the health and well-being of those populations."[3] This approach continues to inform the activities of the Federal Health Portfolio (visit: http://www.phac-aspc.gc.ca/portfolio-eng.php).

Some social determinants

Health is not determined by individual biological factors alone; many associated social and environmental determinants have also been identified. "Social determinants of health" (SDOH) refer to the organization and distribution of economic and social resources which directly or indirectly have an impact on health.[4] For example, by various measures, lower socioeconomic status (SES) is associated with reduced life expectancy, higher infant mortality and low birth weight, and increased incidence of cardiovascular disease, injury and suicide.[5] Indeed, there is a clear socioeconomic gradient in health status, i.e., there is a significant difference in disease prevalence and years of life lost to early death across every "step" of income level, from the highest quintile (20% of the population) to the lowest quintile.[5]

SDOH apply to all Canadians, but some have particular relevance for immigrants. Adequate income is especially important to immigrants and their families who are trying to negotiate life within a new society. Other social determinants are highly relevant to immigrants' physical and mental health:

- Social ties to family, friends and supportive social networks in the wider society make all the difference in immigrants' ability to achieve emotional well-being, to acquire information and obtain help when needed, and to adapt and feel a sense of belonging in Canada.
- English/French language skills and health literacy are key to accessing health services.
- Suitable employment is a priority for most immigrants, but is hard for many to achieve.

Important cultural barriers

Cultural barriers are common in seeking help and obtaining health services. Immigrants report more barriers to health care than do non-immigrants, and perceive that existing health services are not sensitive to cultural-, faith- or language-based needs of diverse communities.[6] Cultural issues include prior education about health in the country of origin, cultural beliefs about illness, familiarity with the health care system in Canada and perceptions that health service providers and institutions lack cultural awareness. Barriers identified by immigrants include: fear of speaking English; suspicion of authority; isolation and a sense of being an outsider; reliance on children (who may have inadequate experience and language proficiency themselves) to find accurate information; lack of familiarity with Canadian information sources; cultural differences; and not knowing how to ask for services.[7]

Intersecting health risks

Immigrants in Canada are not a homogeneous population. Some immigrant sub-groups experience a variety of intersecting health risks related to gender, low social status, lack of support and changing family dynamics. For example, children and youth, lone mothers, refugees who have experienced pre-migration trauma and loss, as well as migrants with precarious immigration status, face multiple and intersecting social determinants that may compound health risks.

The impacts of the SDOH vary across the immigrant population by immigration status, gender, generation and often by ethno-linguistic group, suggesting that it is important to identify health inequalities and to implement targeted health and social interventions for specific immigrant sub-groups. The determinants of immigrant health, however, must be seen against the backdrop of broader social trends. For example, growing poverty affects an increasing proportion of the population in Canada[8] which, in turn, increases risks for mental and physical health. Poor health is linked to poverty, financial insecurity and income inequality, common in immigrant populations—especially in the early years of settlement.[9]

Focus on Social Determinants Specific to Immigrants

A number of SDOH uniquely affect immigrants. Some are discussed below.

Migration, resettlement and adaptation

Most immigrants arrive in Canada with high hopes for themselves and their children, only to realize that starting life over is more demanding than anticipated. At that point, social support networks among family and friends, as well as a growing circle of formal supports and services, are vital.[10] Social support from family and community sources buffers the stresses of migration and resettlement, promotes mental and physical health, and enables help-seeking.[11,12]

Although many immigrants experience a loss of customary family and social supports when they settle in Canada,[13] refugees who have been affected by long-term warfare, disaster and societal breakdown tend to exhibit higher levels of stress.[14] The health risks posed by the stresses of resettlement and adaptation, however, are not inevitable. Longitudinal research with refugees resettled in Canada has shown that it is possible for even the most vulnerable forced migrants to achieve good health and successful settlement outcomes if social supports, services and opportunities are available.[15]

Racialization and race-based discrimination

Race is a social construct. Nevertheless, labels used to describe race—such as "Caucasian," "Black" or "Asian"—are frequently presumed to describe objective, genetically discrete categories. This "genetic" view has been refuted by a growing body of evidence across biological and social sciences that demonstrates that while race makes reference to physiological traits, it is nevertheless a categorization scheme that is social in both its origin and maintenance.[16]

The understanding of race as a social construct is linked to the reality of *race-based discrimination* by

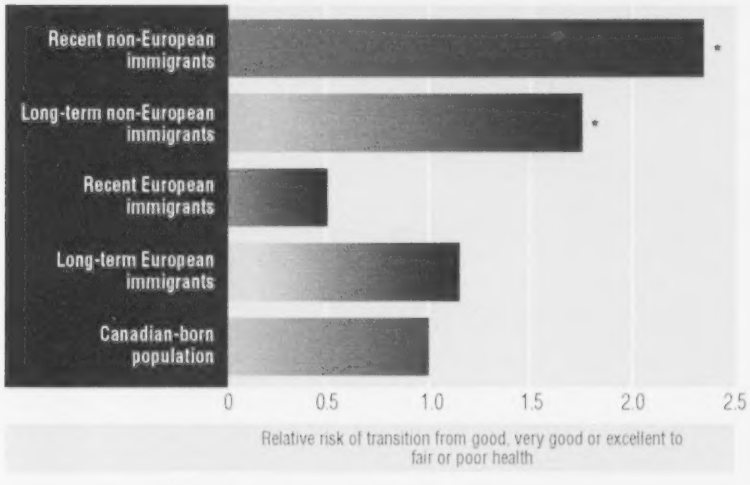
the concept of *racialization*, which refers to the social processes whereby certain groups come to be designated as different and consequently subject to differential and unequal treatment.[16,17,18] The attribution of racial membership significantly shapes collective experience—that is, individuals and groups are *racialized*, rather than simply "belonging to" a certain race. The term racialization makes clear that race is not a static biological fact, but is rather constructed through social interactions, norms and institutions, and potentially exposes individuals to racism.[16]

Before the 1970s, waves of immigrants to Canada were primarily European, but the majority of those arriving in recent decades have come from Asia, the Middle East, Africa and the Americas. Non-European immigrants are more likely to fall into racialized social groups in Canada, often known as "visible minorities." By 2031, Canada could have between 11.4 million and 14.4 million persons belonging to a visible minority group—more than double the 5.3 million reported in 2006; the rest of the population, in contrast, is projected to increase by less than 12%.[19] Available health data show that non-European immigrants are more likely to experience a decline in health over time which suggests that, although healthy on arrival, they face greater challenges in maintaining their health in Canada (see Figure 1).

Available health data show that non-European immigrants are more likely to experience a decline in health over time which suggests that, although healthy on arrival, they face greater challenges in maintaining their health in Canada.

The data imply that racial discrimination, operating on multiple social, structural and systemic levels, is a looming social determinant of physical and mental health specific to recent immigrants and ethnoracial groups in Canada.[16] According to Canada's Ethnic Diversity Survey, 20% of people reported experiencing discrimination "sometimes or often" in the previous five years. Almost one third (32%) of Blacks reported experiencing discrimination in Canada, compared with 21% of South Asians and 18% of Chinese.[20] Perceived discrimination has an impact on mental and physical health through direct effects on individual psychology and physiology as well as through links to other SDOH.[21]

Figure 1 Relative Risk of Transitioning from Good, Very Good or Excellent Health to Fair or Poor Health (European Immigrants, Non-European Immigrants, Canadian-Born)



* *Significantly different from estimate for Canadian-born ($p < 0.01$).*

Note: All explanatory variables are based on the situation in 1994/95. Because of rounding, some confidence intervals with 1.0 as upper/lower limit are significant.

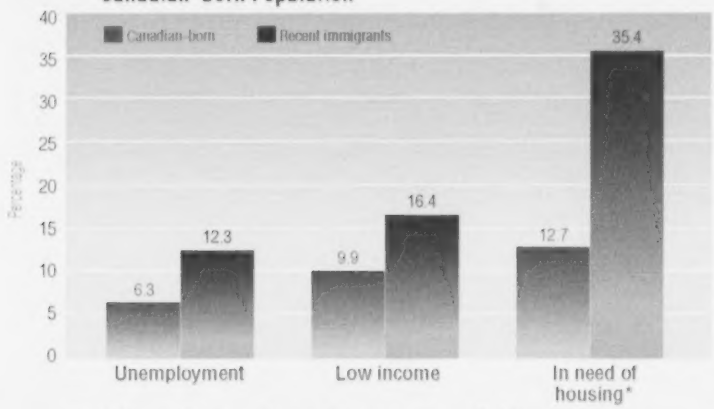
Data source: 1994/95 to 2002/03 National Population Health Survey, longitudinal file.

Immigrants and education

Canada's selection policies ensure that most immigrants are well educated; however, educational advantage does not necessarily translate into labour force benefits. Research has shown that the economic outcomes of recent immigrants have deteriorated since 2000; recent arrivals are experiencing more difficulties finding employment than earlier cohorts, and the relative incomes of recent immigrants are declining despite their above average educational attainment and skill levels.[22,23,24]

Results from the Longitudinal Survey of Immigrants to Canada show that lack of Canadian experience, problems with recognition of foreign qualifications or work experience, and language barriers were the top difficulties barring labour market entry of immigrants during the first four years following arrival in Canada.[25] For refugee newcomers, unemployment, economic hardship and unmet expectations are associated with high risks for, and symptoms of, depression.[12,26]

Figure 2 Conditions Affecting Health of Recent Immigrants Versus Canadian-Born Population



*Households currently in housing that is inadequate, unsuitable or unaffordable.

Source: Human Resources and Skills Development Canada, 2009.

Immigrant underemployment and poverty

Research has demonstrated a strong association between health, income and employment,[27] and between downward mobility and health—factors that affect immigrants who tend to be underpaid and underemployed in Canada.[28] In 2004, more than one in five recent immigrants of working age were living in poverty compared with fewer than one in ten other Canadians.[28]

The following example helps to demonstrate the relationship between downward mobility and health:

> "Adult members of the working class who had nonworking class childhoods are . . . at higher risk for heart disease and diabetes, and are inclined to report fair or poor health than those who were not downwardly mobile. Women who lead single parent households and immigrant and refugee women and men are most vulnerable to the effects of downward mobility, which are associated with changes in household configuration and migration."[29]

In 2008, 42% of immigrants were underemployed, that is, working at jobs at a lower level than would be expected based on their level of education.[30] Lack of recognition of immigrants' educational credentials and discrimination in the labour market are two factors that may contribute to this problem.[31] Members of a visible minority are more likely to be in low-wage jobs than are other Canadians and to receive lower pay when occupying jobs comparable to non-minorities.[32]

Figure 2 illustrates the disparity of these social determinants (with the addition of disparity in housing needs) between the recent immigrant and Canadian-born populations. All of these socioeconomic hardships have an important impact on immigrants' health.[33]

A Way Forward: Policy Sensitivity of SDOH

SDOH significantly influence the mental and physical health and well-being of immigrants in Canada. In particular, gender, poverty, meaningful employment opportunities, social support and experiences of discrimination affect equitable access to available health services as well as health outcomes. Research on the relationship between these factors and the health of immigrant populations highlights opportunities for meaningful policy development in this field.

The good news is that SDOH and health inequalities are policy-sensitive. For example:

- The effects of social and economic inequalities can be mitigated through such individual, community and structural interventions as:
  - teaching positive parenting techniques (found to mitigate the effects of low income on child development)
  - improved access to affordable housing
  - a comprehensive system of child supports, including child care
  - employment insurance and protection for precarious/informal workers
  - legislated minimum wage and pay equity
  - accessible and innovative official language training.
- Protective factors can be fostered—for example, community-based social supports can reduce the impact of structural stressors.
- Strong systems of social protection can support health equity. For example, "Generous universal protection systems are associated with better population health, including lower excess mortality among elderly people and lower mortality among socially disadvantaged groups."[34]

Further research on the SDOH and their distribution among immigrant and refugee populations, as well as rigorous evaluation of promising interventions at individual, community and social policy levels, can support the reduction of health inequalities faced by immigrants and refugees in Canada. ■

Please note: Full references are available in the HTML version of this issue of the Bulletin: http://www.healthcanada.gc.ca/hpr-bulletin

Spotlight on Research

Determinants of Health of Migrant Farm Workers in Canada

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Despite wide indications that migrant farm workers (MFWs) comprise a particularly vulnerable subset of the temporary foreign worker population, relatively little attention has been paid to their health issues. This article describes major health concerns among MFWs in Canada, reviews the social determinants of health of particular importance to this population, and notes research and policy implications. Findings are drawn primarily from two recent literature reviews conducted for the Public Health Agency of Canada.[1,2]

Over the past decade in Canada, there has been a marked rise in the use of temporary foreign workers (TFWs), including groups such as live-in caregivers, workers for projects in the Alberta oil sands, and seasonal agricultural workers or MFWs. From 1998 to 2008, the number of TFWs entering Canada increased from 100,436 to 192,519 (an increase of 91.4%) before dropping to 178,478 in 2009.[3]

Although MFWs constitute only 13.7% of all TFWs who entered Canada in 2009,[4] they are an important population to assess. As the longest standing group of circular migrants (those who return year after year but never immigrate) in the country, their experiences may shed light on potential issues facing other TFWs. At the same time, issues such as the desire for cheap food and robust local food systems, global competitiveness and seasonality have resulted in agriculture being viewed as a unique industry. Due in part to these considerations, MFWs have long received fewer health and safety protections and labour and union rights than have been standard for workers in other sectors; they have been recognized as a particularly precarious labour force.[5]

Although MFWs constitute only 13.7% of all TFWs who entered Canada in 2009, they are an important population to assess. As the longest standing group of circular migrants (those who return year after year but never immigrate) in the country, their experiences may shed light on potential issues facing other TFWs.

Managed Migration Programs

The Seasonal Agricultural Workers Program (SAWP) is the principal scheme through which MFWs are employed in Canada. In place since 1966, the SAWP is a managed migration program that employs workers from Mexico and the Caribbean throughout Canada for contracts of up to eight months each year, after which they must return to their countries of origin. The SAWP now offers approximately 28,000 positions a year, with workers present in all provinces except Newfoundland and Labrador (see Table 1). Farm workers from other countries, such as Thailand and the Philippines, have also been employed through the *Pilot Project for Occupations Requiring Lower Levels of Formal Training*, which allows for work visas of up to 24 months from applicants in any country. (For additional information, please visit: http://www.rhdcc-hrsdc.gc.ca/eng/workplaceskills/foreign_workers/sawp.shtml.)

A private, bilateral agreement between an employer group and the International Organization for Migration brought 3,313 MFWs from Guatemala in 2008,

Table 1 Number of Temporary Foreign Worker Positions Under the Seasonal Agricultural Worker Program, by Province of Employment*

Province	2006	2007	2008	2009
Prince Edward Island	81	131	118	145
Nova Scotia	322	407	622	805
New Brunswick	17	25	19	28
Québec	3,171	3,595	3,758	3,754
Ontario	18,097	18,744	18,552	17,989
Manitoba	311	299	343	362
Saskatchewan	42	84	101	124
Alberta	527	684	950	1,010
British Columbia	1,484	2,614	3,768	3,437
Canada—Total**	**24,050**	**26,622**	**28,231**	**27,654**

*Excludes Newfoundland and Labrador where the SAWP does not operate.
**Components may not sum up to the totals indicated for methodological reasons. See Source.
Source: Human Resources and Skills Development Canada, Temporary Foreign Worker Program, 2010.[5]

nearly 80% of whom worked in Québec. Guatemalan workers, many of whom are Mayan and speak indigenous languages, may face particular concerns including multiple layers of discrimination and additional language barriers.[7]

Employers determine the country of origin and gender composition of their work forces. MFWs generally come from racialized groups, are young or middle-aged men, and have low education levels and socioeconomic status. Pre-departure medical screening contributes to generally good health status upon arrival of most of these workers. However, an unspecified number of MFWs are employed without legal authorization; as a result, this population may face particularly precarious circumstances.[8,9]

SDOH and Migrant Farm Workers

Substantial evidence from the United States[10,11,12] and a small but increasing body of research in Canada[13,14,15] demonstrates that MFWs are significantly vulnerable to a number of health concerns. Issues relating to occupational and environmental health, sexual and reproductive health, and mental health, as well as chronic and infectious diseases, have been identified as particular areas of concern. A number of issues relating to the social determinants of health (SDOH) may contribute to poor health outcomes. Some of the primary SDOH facing MFWs are summarized below.

Employment and working conditions

MFWs typically work in conditions of high demand and low control. Farm workers are susceptible to a number of occupational health concerns arising from exposure to risks such as agrochemicals, machines, soil, plants, climatic extremes, and awkward and repetitive ergonomic positions. Despite stipulations in the SAWP contract regarding the provision of training and protective clothing for workers handling pesticides, occupational health and safety protections are inconsistent and often insufficient. Moreover, workers' ability to access protections and assert rights is undermined by the precarious nature of their temporary contracts. In particular, MFWs generally lack the ability to change employers freely. The resultant fear of loss of employment or deportation is a significant contributor to health vulnerabilities. When MFWs become too sick or injured to continue working, they are typically repatriated to their countries of origin, where they often lack domestic health insurance. (In some cases injured workers may be eligible for workers' compensation benefits, but there are multiple barriers for workers to access these benefits, which are limited.) These factors constitute considerable barriers to migrants feeling empowered to request improved workplace conditions or interventions, to report injuries and illnesses, and to otherwise address concerns.

Income/social status

MFWs often live in poverty. Their incomes, which are normally at or just above minimum wage, are reduced by a

number of factors such as seasonal employment with fluctuating hours, exclusion from vacation and overtime pay and regular employment insurance benefits, and numerous deductions from their wages. Low-income levels can affect several aspects of migrants' health, including their ability to access safe transportation and sufficient nutritious food. Poor diet is a recognized concern among MFWs, as are injuries sustained while using unsafe transportation methods, such as poorly equipped bicycles.

Social support and connectedness

Social support and connectedness are particularly important for mitigating the various stresses experienced by MFWs, and for sustaining mental, emotional and physical health. Migrant workers' social support and community connectedness in Canada are undermined by their isolation and lack of services in rural areas; language and cultural barriers to interacting with Canadian communities; dislocation from families and traditional support networks; and the restrictive nature of their working and living conditions which do not promote, or sometimes even permit, community integration. Such circumstances may contribute to mental health problems, such as depression and anxiety, as well as to addiction to drugs or alcohol.

Social support and connectedness are particularly important for mitigating the various stresses experienced by MFWs, and for sustaining mental, emotional and physical health.

Environment and housing

Minimal and inconsistent housing guidelines and inspections lead to highly variable conditions of migrant dwellings.* MFWs often reside in overcrowded accommodations, with resulting health impacts, varying from poor sleep habits to susceptibility to infectious disease. Generally these workers do not feel empowered to complain about poor conditions. They are often unaware of their rights, and their landlord is typically their employer, who influences whether or not they remain in and/or return to Canada.

Access to health care and health literacy

Although legally employed MFWs have the right to health care in Canada, many find it difficult to gain access in practice. Principal barriers include: a lack of independent, safe transportation; long work hours; workers' unwillingness to leave work (or even inform employers) when sick or injured for fear of losing employment; the repatriation of sick or injured workers; and delays in receiving health cards or coverage, for which employers are responsible for applying. If MFWs are able to access health care services, there are additional challenges relating to health literacy. These include: language barriers and cross-cultural differences in care provision; poor education and literacy levels; and a lack of information or support for MFWs as well as health care providers, who experience particular challenges in following up and providing care to MFWs.

Gender issues

Women comprise only a small minority of MFW positions (about 3% of the SAWP and 7% of the Guatemalan program). However, they face uniquely gendered experiences. Exposure to chemicals and other hazards may affect women's menstrual cycles and reproductive systems. Many women, furthermore, are pressured to enter into sexual or romantic relationships, while others may endure sexual harassment from both co-workers and employers. Women face both the risks of sexually transmitted infections as well as unwanted pregnancies. It is particularly challenging for women to negotiate health services (especially around sensitive issues such as sexual and reproductive health), with their primarily male employers and supervisors acting as intermediaries. Finally, most female MFWs are lone mothers, who leave their children without a parent at home. In part due to anxiety around these and other issues, many women experience heightened mental and emotional strain.[16]

Research and Policy Implications

The health of migrants affects MFWs and their societies as well as the Canadian communities in which they live and work. Changes in several policy areas could address the underlying SDOH challenges facing this vulnerable population, in which gender and ethnic differences should be taken into account. These include: working conditions, contracts and legal rights; occupational health and safety training and inspections; housing conditions and inspections; transportation options; social, legal and language support; and health care, education and insurance. To better understand what policy changes are needed and how they can best be applied, further policy-oriented research in the Canadian context on SDOH and health outcomes among MFWs is warranted. ■

*In spite of the National Minimum Standards for Agricultural Housing established by Human Resources and Skills Development Canada, the research reviewed found conditions to be highly variable.

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HIV/AIDS and TB in Migrants to Canada

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The authors acknowledge the contribution of Ilene Hyman, PhD, Dalla Lana School of Public Health and Cities Centre, University of Toronto, to this article.

In spite of the "healthy immigrant effect" with respect to chronic diseases, immigrants are disproportionately affected by certain infectious diseases such as HIV and tuberculosis (TB) that are endemic in certain countries of origin. This article describes the epidemiology of TB and HIV infection and co-infection in Canada, and discusses how being infected with one or both of these diseases affects both the immigration process and the post-immigration period. Once in Canada, affected individuals face barriers in accessing necessary prevention, care treatment and support services, thus posing challenges for public health.

In Canada, as in the United States and countries in western and central Europe, national HIV epidemics are concentrated among specific populations, including certain migrant populations.[1] The migrant population in Canada most affected by HIV/AIDS consists of people who originate mainly from sub-Saharan Africa and the Caribbean. This population is also at a higher risk for TB infection. A higher prevalence of HIV and TB in those countries of origin is associated with higher rates of these diseases in individuals from those countries who have immigrated to Canada.

HIV Infection

Data from the 2006 Census indicate that, from 2001 to 2006, the percentage of all new immigrants to Canada from HIV-endemic countries[2] increased from 2.00% to 2.16%. In 2006, this population represented 2.3% of the Canadian population. The majority lived in Ontario (63%), with a sizeable proportion in Québec (19%). Most (96.4%) lived in the 48 most populated urban centres in Canada.[3]

At the end of 2008, an estimated 65,000 people in Canada were *living with* HIV infection; heterosexual persons from HIV-endemic countries[4] comprised approximately 14% of prevalent HIV infections. Between 2,300 and 4,300 *new* HIV infections occurred in Canada in 2008, of which 16% were within the heterosexual-endemic risk category (see sidebar below). The estimated new infection rate among individuals from HIV-endemic countries was estimated to be about 8.5 times higher than among other Canadians.[5] In 2005, females from HIV-endemic countries accounted for a substantial proportion of newly diagnosed HIV infections among women.[6]

Using available surveillance data for individuals tested in Canada, it is difficult to differentiate between HIV infections acquired abroad from those acquired in Canada. A modelling exercise conducted in 2004 suggested that 20% to 60% of new infections in the HIV-endemic group in Ontario occurred after arrival in Canada.[7]

HIV Infection Exposure Categories[8]

- Perinatal transmission
- Men who have sex with men (MSM)
- Injection drug users (IDU)
- MSM–IDU
- Recipient of blood/blood products
- Heterosexual contact:
  - origin from an HIV-endemic country
  - sexual contact with a person at risk
  - no identified risk
- Occupational exposure
- Other

Tuberculosis Infection

Over the past decade, 80% of the immigrants and refugees who have come to Canada each year have originated from countries with a high incidence of TB.[9,10] Although the reported incidence rate of *active* TB (new and re-treatment cases) in foreign-born individuals in Canada has declined over the past decade, from 21.2 per 100,000 in 1998 to 13.7 per 100,000 in 2008, the number of *new* TB cases (a sub-set of active cases—see sidebar, page 35) reported to the Canadian Tuberculosis Reporting

System annually in the foreign-born population has not changed substantially since 1970 (there are approximately 1,020 *new* cases annually in this population—see Figure 1).[11] The incidence rate is reflective of a larger foreign-born population (the denominator in the rate calculation) now residing in Canada.

Although the total number of *active* TB cases reported in Canada has remained stable, the proportion of the cases diagnosed in foreign-born persons has increased significantly, from 18% of *all active* cases in 1970 to 63% in 2008. In 2008, a total of 1,604 cases of *active* TB disease were reported in Canada, of which 1,004 (62.6%) occurred in foreign-born persons.[11]

Dynamics of HIV/TB Co-Infection

Among persons with latent TB infection, dual infection with HIV is the most important risk factor for the development of active TB disease—with an annual risk of progressing to active TB disease varying from 3% to 13%. As well, active TB disease may accelerate the course of HIV infection in some individuals. Thus, identifying the presence of TB infection is exceptionally important for individuals who are HIV-infected.[10]

Drug-resistant TB poses a serious threat to TB prevention and control programs. HIV infection has been associated with institutional outbreaks of multi-drug-resistant TB, related primarily to poor infection control in hospitals and prisons.[12] To date, however, there are limited data on the association of HIV and drug-resistant TB at the population level which increases public health challenges.[13]

Determinants of Health and Infection

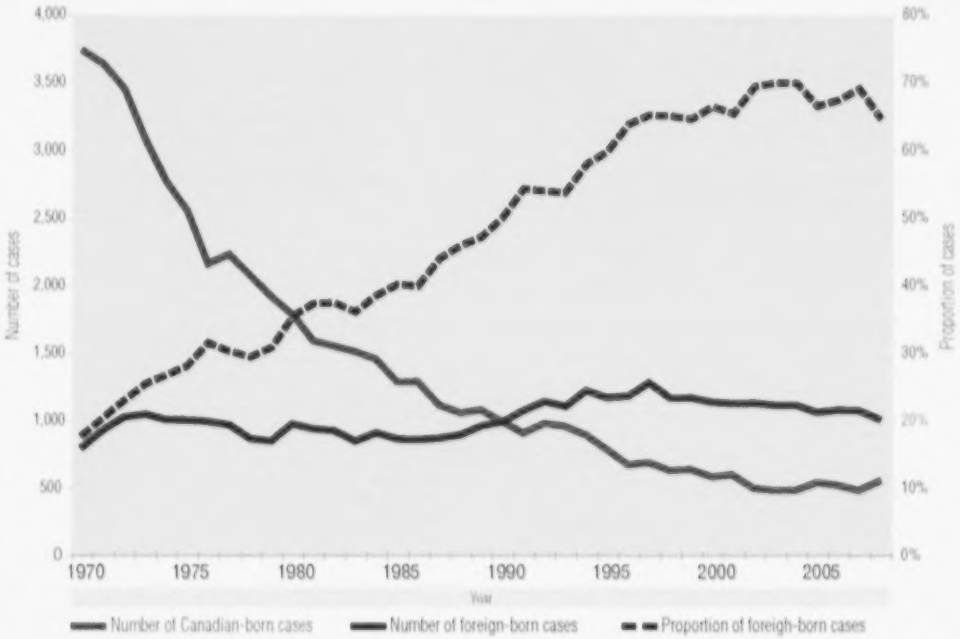
In addition to co-infections, health determinants such as income, education, employment, housing, early childhood development, culture, access to health services, support networks and gender also influence a person's ability to maintain good health. Health determinants intersect with the challenges faced during the immigration process, as well as with stigma associated with HIV and TB. For example, differences exist between Black people and other populations in their response to various HIV/AIDS therapies.[14] In addition, the biological susceptibility of women to HIV/AIDS (the risk of contracting HIV through penile- vaginal intercourse) is greater than for men and is exacerbated by their social and economic circumstances. Sexual and physical violence against women has a direct impact on their ability to practise HIV prevention.[15]

Many of these factors are discussed in greater depth in the Public Health Agency of Canada's report—*Population-Specific HIV/AIDS Status Report, People from Countries where HIV is Endemic—Black people of African and Caribbean descent living in Canada.*[16]

Immigrating with HIV and/or TB

The immigration process has a significant impact on the health and well-being of those living with TB and/or HIV. Citizenship and Immigration Canada assesses all immigration applicants for medical admissibility, and HIV and TB testing is mandatory for new immigrants to Canada. To be inadmissible due to health reasons, an applicant must have a condition that is likely to be a danger for public health or public safety, and/or is likely

Figure 1 Reported Tuberculosis Cases by Origin in Canada, 1970-2008



Source: Canadian Tuberculosis Reporting System, Tuberculosis Prevention and Control, Public Health Agency of Canada.

to create an excessive demand on Canadian health and social services. (Certain immigrants, such as refugees and some family class immigrants, are exempt from the excessive demand criteria.)

Since HIV infection is generally not considered to be a danger to public health or safety, persons who are HIV positive may be permitted entry into Canada if they meet all other applicable criteria for admissibility.[16] Applicants identified as having active TB are denied entry into Canada until they can prove that they have completed their treatment and that they are deemed non-infectious. Applicants identified as having inactive pulmonary TB are permitted entry into Canada, but they are placed under medical surveillance by provincial or territorial health authorities.[10]

Among foreign-born people, most cases of active TB disease are associated with reactivation of latent TB infection (LTBI) acquired prior to immigration. Active TB disease most commonly occurs within the first two years following immigration. Among those who arrived in Canada with latent TB between 1998 and 2008, 11% were diagnosed with active TB during the first year following arrival into Canada and another 11% were diagnosed during the second year. A total of 44% of active TB cases were diagnosed within the first five years following arrival into Canada (see Figure 2). HIV status (positive or negative) was known for only 22% of the cases that developed active TB within the first five years after arrival.[11]

Key Terminology[10]

Incidence: The number of new cases of a given disease in a defined population during a specified period of time.

Multi-drug-resistant tuberculosis (MDR-TB): Tuberculosis caused by strains of *Mycobacterium tuberculosis* that are resistant to at least isoniazid and rifampicin, the two best TB antibiotics.

Latent tuberculosis infection (LTBI): People with LTBI are infected with the bacterium that causes TB, but they have no evidence of clinically active TB disease and are non-infectious (i.e., they cannot spread the infection to others). However, persons with LTBI infection may develop active TB disease at some time in the future.

Active tuberculosis disease: TB bacteria become active if the immune system weakens and cannot prevent their growth. People with active TB disease are infectious and may spread the bacteria to others.

New active case of tuberculosis disease: A newly diagnosed case of active TB in which the person has no documented evidence or adequate history of previously active TB.

Re-treatment case of tuberculosis: A person with previously active TB disease who is diagnosed with a subsequent episode of active TB disease.

Vulnerabilities associated with being HIV positive

Becoming aware of one's positive HIV status through the mandatory medical screening of youth and adult immigrants to Canada (a component of the Immigration Medical Exam process) can have numerous implications. An HIV-positive diagnosis in Canada raises disclosure concerns, may complicate reunification with children and family, and may affect a person's ability to work and send money to family outside of Canada. People testing positive may be unaware of their rights in Canada or they may fear that a positive diagnosis will jeopardize their chances of staying in Canada.[17]

Access to appropriate health care services is especially important to address the multi-layered level of stress and burden often experienced by this population.[18] A newly diagnosed immigrant may be unable to access HIV care and support services.[17] Challenges to access include lack of culturally sensitive and appropriate information, communication difficulties and the lack of awareness of availability of services. Furthermore, the assumption that most people have considerable faith in the health care system and seek its services may not hold for many of those at risk of or living with HIV/AIDS.

Canada's mandatory HIV testing policy may also have unintended side effects. For example, a study of vulnerability and sexual risk among African youth in Windsor, Ontario, found that "both male and female participants felt that they were less vulnerable to HIV in Canada [because] participants generally agreed that the Canadian immigration service only awards visas to immigrants who have a clean bill of health." This false sense of safety may in fact increase the risk of youth engaging in HIV-related risk behaviours among their peers, such as engaging in unprotected sex.[19]

Cultural factors and HIV infection

Cultural practices and norms specific to a person's country of origin can further impact a person's vulnerability

to HIV/AIDS. For example, sex is often a taboo subject, resulting in limited or no discussion with or among community and religious leaders. This can prevent discussions about HIV prevention and deny support to people who are HIV positive. People living with or affected by HIV/AIDS are often isolated as they fear the impact of disclosure. They may even be perceived as deserving of their diagnosis. This is especially relevant for HIV-positive persons who identify as gay, since homophobia or the denial of the existence of homosexuality continues to prevail in many communities in Canada.[17-20] The quote opposite illustrates how stigma and the risk of being ostracized can create barriers to accessing appropriate services and support within the community of the country of origin, as well as the challenges regarding HIV status disclosure.

"Being homosexual, you're the bottom of the barrel. You add AIDS on to that, you're underneath the damn barrel. Like, you can be the bottom of the barrel, and then there's the underside of the bottom of the barrel. And then you're just totally shunned."

—Trinidadian man living with HIV[24]

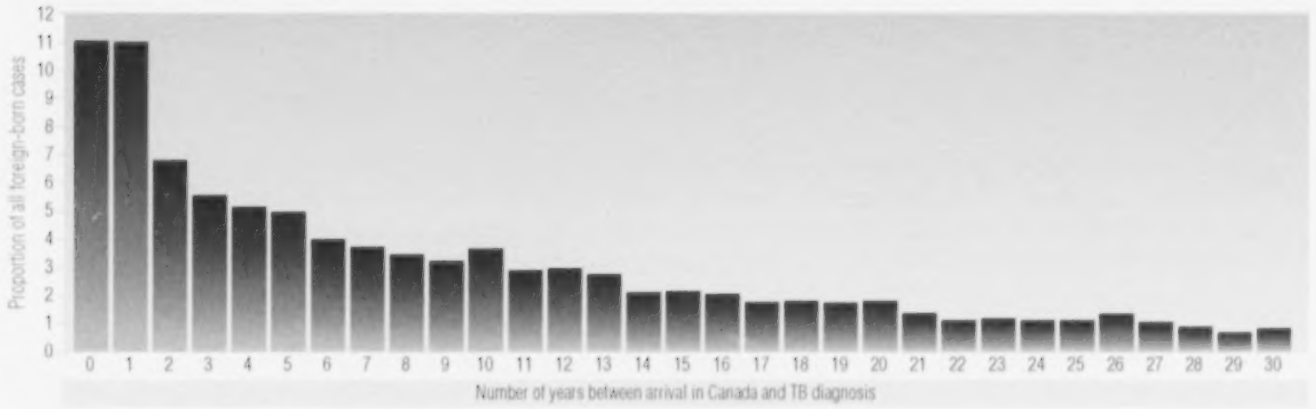
Demonstrating Resilience

Despite the challenges that Canadian immigrants may face, many have overcome the barriers associated with settlement and adaptation, and have mitigated the potential risk of negative outcomes. For immigrant groups, the extent of integration they achieve within the broader community, as well as the degree of connectedness they maintain among themselves, are key factors in their overall health and quality of life.[21] These social networks play an important role in fostering a sense of belonging, promoting social and economic integration, enabling access to community services, buffering the deleterious effects of stress, serving as an important coping resource for newcomers, and contributing to physical and mental health.[22,23]

Many migrant communities in Canada have demonstrated their capacity to successfully build inclusive networks to support people affected by HIV and/or TB.[18] The Immigration Subcommittee of the Canadian Tuberculosis Committee (which provides evidence-based advice to the Canadian Tuberculosis Committee regarding TB prevention and control for migrants to Canada), the Interagency Coalition on AIDS and Development, and the African and Caribbean Council on HIV/AIDS in Ontario (which is involved in addressing HIV/AIDS issues among the immigrant population) are examples of Canadian stakeholder groups that have demonstrated strong collective will and leadership. Their unwavering dedication to increasing awareness and to reducing stigma and discrimination has contributed to a growing recognition of the importance of these issues within their own communities.[10,16] ■

Please note: Full references are available in the HTML version of this issue of the Bulletin: http://www.healthcanada.gc.ca/hpr-bulletin

Figure 2 Proportion of Reported Foreign-Born TB Cases Diagnosed Between 1998 and 2008, by Number of Years Between Arrival and Diagnosis



Source: Canadian Tuberculosis Reporting System, Tuberculosis Prevention and Control, Public Health Agency of Canada.

Health Services Use Among Immigrants and Refugees to Canada

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Over recent decades, the proportion of the foreign-born population in Canada has been increasing. With this increase comes a growing need for information on the health status of this population, including information on whether, and to what extent, the health care system is meeting their needs. This article highlights the results of a joint study examining patterns of health services use (HSU) among immigrants and refugees to Canada.

Canada has seen the diversity of its population change rapidly over recent decades, and this diversity is projected to continue. In 2006, 19.8% of Canadians had been born outside of Canada;[1] recent population projections estimate that by 2031 between 25% and 28% of Canada's population could be foreign-born.[2]

The greater population diversity resulting from migratory flows poses new challenges for our health care system. The vulnerability associated with moving to an unfamiliar environment makes access to health care services a major component of the health response of host countries.[3] A recent study found that immigrants who reported having problems accessing health care services were significantly more likely to experience emotional problems and high levels of stress.[4]

Why Focus on Health Services Use?

Although immigrants and refugees make up a significant segment of the Canadian population, knowledge of their unique patterns of health and health care needs is limited. Some studies have suggested that, overall, recent immigrants are "under users" of the health care system, but whether this lower use reflects societal and cultural barriers or actual lower levels of need has yet to be established.[5,6] There is evidence to suggest that health status and HSU disparities may also vary by personal characteristics, migration experiences and region of origin.[5,7]

At the outset of the research described here, detailed pan-Canadian information about HSU among immigrants and refugees was limited, and detailed information on sub-groups of immigrants and refugees (i.e., by immigration category, country of birth and length of time in Canada) for various diagnostic and physician-specialty groupings had not been examined.

In order to address these key knowledge gaps, a collaborative pan-Canadian National Immigrant Health Assessment Project was undertaken by Citizenship and Immigration Canada and the Public Health Agency of Canada, with co-funding from the Canadian Population Health Initiative. The study examined health status and HSU of immigrants and refugees to Canada; however, the focus of this article will be on the results of the HSU portion of the study.

National Immigrant Health Assessment Project

The study was designed to provide a comprehensive picture of immigrants' and refugees' HSU while also taking into account the heterogeneity of this population. To do this, results of this study were broken down by immigration category (i.e., refugees granted status in Canada, refugees granted status abroad, principal applicant

economic immigrants, sponsored spouses/fiancé(e)s and other dependants), region of birth (European region, Asian region, etc.) and length of stay in Canada. Unless otherwise specified, in this article the term "immigrant" includes both the immigrant (i.e., family class and economic class immigrants) and refugee (i.e., refugees granted status in Canada, refugees granted status abroad) populations.

Standardized rates of HSU (n=2,713,676) between 1998 and 2000 were calculated using linked health data (i.e., hospital discharge data and physician claim databases in each province) and immigration data (i.e., Landed Immigrant Data System) for immigrants to Québec, Ontario and British Columbia who landed between 1985 and 2000.

Comparison groups were established, consisting of Canadian residents (including immigrants to Canada prior to 1985) of the same age and sex, and living in the same health unit jurisdiction. Immigrant HSU rates were then compared to those of the comparison groups using rate ratios. All rates were stratified by several factors, including immigration category, sex, World Health Organization (WHO) region of birth, country of birth and length of stay in the host province.

HSU varies by immigration category

Overall, immigrants' HSU was lower than that of the comparison group. Immigrants had 5%–24% fewer physician visits and 36%–54% fewer hospital discharges.

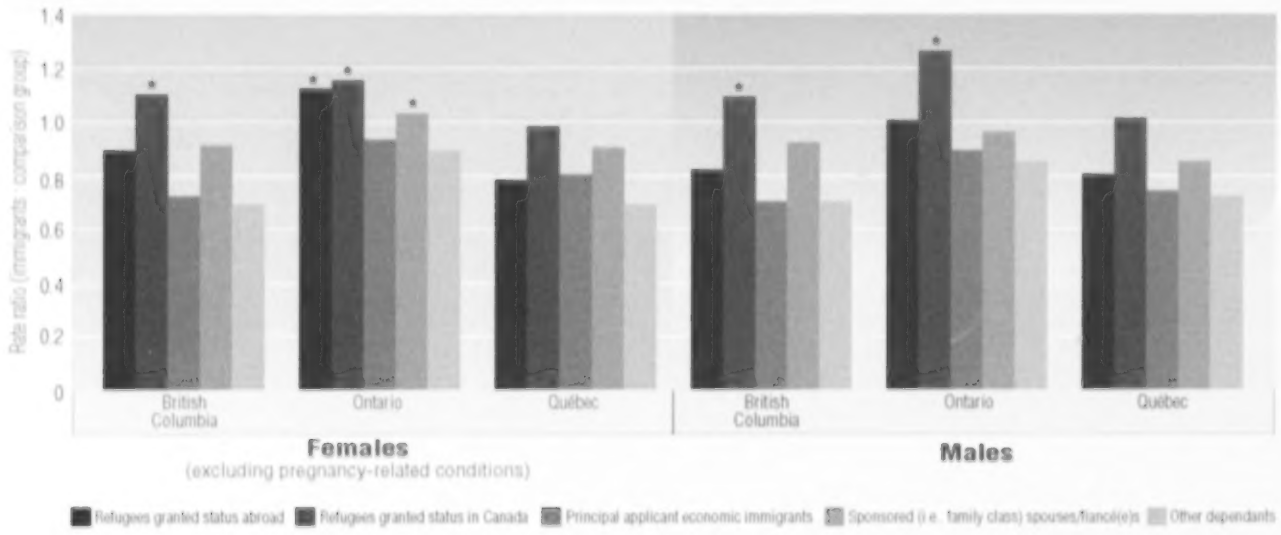
However, HSU differences were seen across the various immigrant sub-groups. For example, refugees granted status in Canada used physician services similarly or more than the comparison group. They also frequently used both physician and hospital services at significantly greater rates than other immigrant sub-groups (see Figure 1). This may be due to a number of factors, including the fact that they may be in poorer health (urgency of their departure due to social or political reasons, etc.) than refugees who arrange for immigration from their country of origin or who arrive from designated refugee camps. Principal application economic immigrants generally had lower HSU rates than the comparison group and refugees (in both sub-groups), possibly due to the presence of fewer health problems.

HSU varies by region of birth

Overall, immigrants from the Western Pacific region were consistently the least frequent users of health services. When investigating variations further, the following differences were observed between immigrant HSU rates in the host provinces (see Figure 2):

- South-East Asian immigrants to Ontario and British Columbia used outpatient physician services more frequently than the provincial comparison groups.

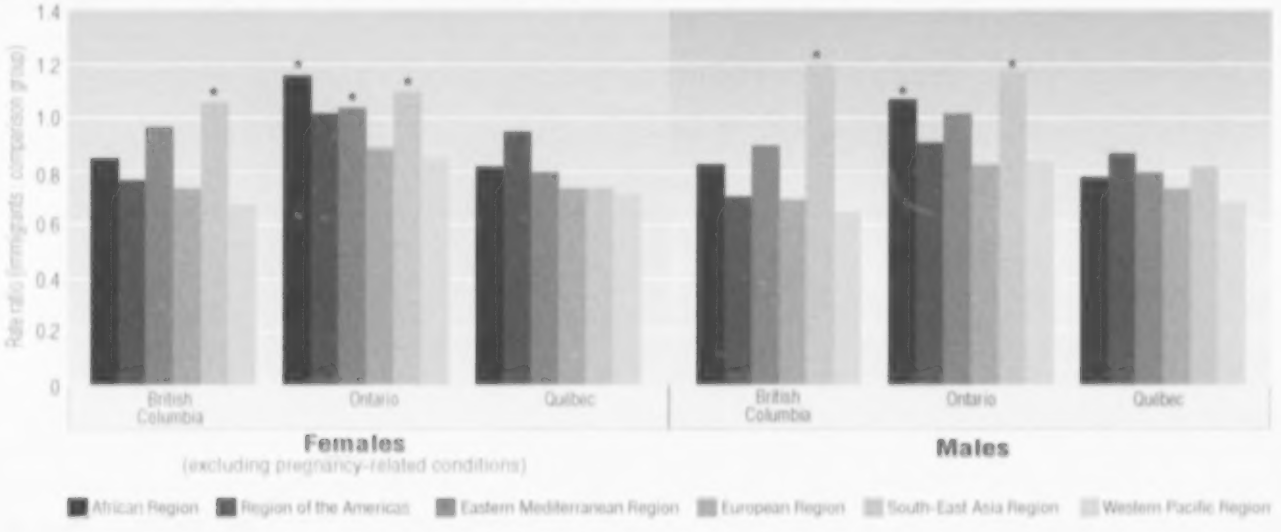
Figure 1 Age-Standardized Rate Ratio of Outpatient Physician Visits by Immigration Category



* *Statistically significant difference between the immigrant category and the comparison group.*

Source: National Immigrant Health Initiative. Unpublished report, 2004.

Figure 2 1998–2000 Age-Standardized Rate Ratios of Outpatient Physician Visits by WHO Region of Birth



* *Statistically significant difference between the immigrants' region of birth and the comparison group.*

Source: National Immigrant Health Initiative, Unpublished report, 2004.

- African immigrants and immigrant women from the Eastern Mediterranean region who settled in Ontario used more outpatient physician services than the provincial comparison group.
- Immigrants to Québec from the Americas used outpatient physician services more frequently than other immigrants to this province; however, their rate of use was still lower than that of the provincial comparison group.

HSU varies over length of time in Canada

In British Columbia, outpatient physician service utilization rates tended to increase with additional time spent in Canada. This was not the case in Ontario or Québec, however, where rates tended to decrease in the first years after arrival, and increase again in later years after arrival. Higher HSU in the initial years after arrival in Ontario and Québec could be due to a build-up of need prior to immigration (i.e., for refugee claimants while awaiting refugee status). The reason for the observed increase in each province is unclear; it may reflect a decline in the healthy immigrant effect (see article on page 17) or an increased level of integration into the host country over time.

HSU varies by type of health services

HSU rates sometimes differed between the immigrant and comparison groups in terms of which health services were used. Information available on use of preventive services was province specific. In Ontario, use of annual exams and immunizations[a] was similar between the two study groups; however, use of Pap smear testing in British Columbia,[b] was lower among immigrant women. The latter finding is consistent with the literature on cervical cancer screening among immigrant women, which shows that recent immigrant women have markedly lower use of Pap smear testing when compared with Canadian-born women; however, these rates slowly increase with length of stay in Canada.[8,9]

Immigrants also had an overall smaller proportion of visits to specialists than did the comparison groups in British Columbia and Ontario. This could reflect less access to specialist care and/or possibly less need for specialist services due to less severe health conditions among the immigrant population.[10]

Similarly, use of mental health services was much lower among immigrants in all provinces, especially among immigrant women. Given the research indicating a greater need for mental health services among some immigrant groups (especially among the refugee populations), this finding would be important to further evaluate in future studies.[11,12]

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[a] *Annual exams and immunizations in Ontario were identified by specific diagnosis codes.*

[b] *Pap smear testing in British Columbia was identified through specific fee-item codes.*

Health Literacy and Immigrant HSU

Laura Simich, PhD, University of Toronto, and
Beth Jackson, Public Health Agency of Canada

Health promotion and the way health services are designed and delivered all impact immigrant population health. Health literacy is an emerging approach for addressing some of the issues related to immigrant population health. Defined as the ability to understand and use health information in order to navigate the health care system and maintain good health,[13] it is not just a one-way process that depends on the ability to comprehend written information. Rather, health literacy is a multidimensional communication process that also involves health care providers' competencies, the "legibility" of the health care system for diverse groups, and appropriate policy and programs to achieve effective communication.

As such, there is a need to design health systems that better respond to the linguistic, cultural, social, religious and health status differences that may impact migrants' ability to use and/or effectively access health care.[14] Designing multifaceted health promotion initiatives in collaboration with immigrant communities, improving the cultural competence of health care institutions and providers, and increasing the availability of cultural interpreters in health care settings are crucial adjuncts to supporting immigrant health.[15]

Insight into HSU Variations

Many of the results presented are consistent with findings in previous studies. As reported by other investigators,[5,6] this study also found an overall lower use of health services among immigrants (when compared to the comparison group). However, many issues explored in the present study have gone beyond those systematically examined in previous research. By analyzing HSU by immigrant sub-groups, the study was able to highlight how immigrants' use of health services not only differed across immigration categories (with refugees granted status in Canada having the highest HSU), regions of birth and length of time in Canada, but also according to the types of services being used.

The overall lower use of health services by immigrants may reflect the healthy immigrant effect for some, or potential barriers to accessing the necessary care. Access to, and use of, health care services results from a complex set of determinants that largely depends on how "a society is able to create a culturally appropriate environment for immigrants and refugees and to overcome the barriers that may limit people's ability to receive care."[7] For example, health literacy and the ability to communicate in one or both official languages, or the way in which the health care system responds to the unique needs and conditions presented by immigrants, may actually impact immigrants' use of health services (see sidebar above).

Implications for Research

Health care systems are often challenged to meet the needs of immigrants.[14] A critical component of designing and implementing appropriate health systems includes "having the data to monitor migrant health needs, service utilization and ongoing health status".[11] In Canada, however, there are currently data gaps that exist when looking at immigrant health. For example, most studies of immigrant health have been based on data for a single point in time (cross-sectional data) and have not been able to assess the health impact of moving and resettling into a new country.[10]

As such, there is a need to better understand how to ensure access to health care services and how to deliver appropriate care to immigrants. The results of the current study can inform the development and evaluation of targeted policies and programs that address the health care needs of migrants to Canada. They also highlight the unique patterns of health among various immigrant sub-groups and support the need to consider the diversity of immigrant populations in population health research and policy and program development.

While the current study optimized the use of available surveillance data on immigrant health, the next steps will examine issues surrounding timely access to primary health care by newcomers to Canada. This next phase of research will document the concerns of primary health care providers with regard to difficulties faced when attempting to provide care in a timely manner, and will also look at providing recommendations to facilitating timely access to primary health care services for newcomers to Canada. ■

Please note: Full references are available in the HTML version of this issue of the bulletin: http://www.healthcanada.gc.ca/hpr-bulletin

Health Status and Social Capital

of Recent Immigrants to Canada

Jun Zhao, PhD, Applied Research and Analysis Directorate, Strategic Policy Branch, Health Canada;
Li Xue, PhD, and **Tara Gilkinson**, Research and Evaluation Branch, Citizenship and Immigration Canada

Social capital has been linked to a variety of health outcomes and is increasingly being studied in health research. This article features some recent analysis that looks at the changes in health status among permanent residents during the first four years following their arrival in Canada, with a particular focus on the effect of social capital on their health.

Social capital refers to the networks of social relations that may provide individuals and groups with access to resources and supports.[1,2] Social capital has been associated with a variety of health outcomes (see Issue 12 of the *Health Policy Research Bulletin*). Recent studies have suggested that social capital may influence health outcomes in a number of ways: by rapidly diffusing health information—thereby improving access to health care resources; by providing tangible assistance such as money, convalescent care and transportation; by reinforcing health norms; and by providing emotional support.[3,4,5,6,7]

The concept of social capital has been found to be particularly relevant to the study of immigrant integration and educational attainment.[8,9] However, a paucity of data means there is limited Canadian research that provides insight into how social capital affects the health disparities and health outcomes of immigrants, both as a whole and among sub-categories.

Social capital refers to the networks of social relations that may provide individuals and groups with access to resources and supports. The concept of social capital has been found to be particularly relevant to the study of immigrant integration and educational attainment.

Immigrant Health Status and Social Capital Study

A joint study was undertaken by Health Canada and Citizenship and Immigration Canada to evaluate the health status of permanent residents by identifying the main social factors that may have an impact on their health outcomes.[10] The target population for the study consisted of different categories of permanent residents (i.e., family class, skilled workers including principal applicants and spouses and dependants, refugees and other immigrants) who arrived in Canada from abroad between October 2000 and September 2001. Data for both the descriptive and regression analyses were derived from the Longitudinal Survey of Immigrants to Canada (LSIC), a survey designed to look at how newly arrived immigrants adapt to living in Canada during the first four years after their arrival. Respondents were interviewed at six months (Wave 1), two years (Wave 2) and four years (Wave 3) after arriving in Canada.[11] The study focused on only those immigrants who had participated in all three waves of the survey.

Study variables

The descriptive and regression analyses used various sociodemographic variables in addition to indicators of health status, social capital and income. Self-rated health was used as an indicator of immigrants' health status and was grouped into two categories—healthy (excellent, very good or good) and unhealthy (fair or poor).

Indicators were developed to measure social capital by using a network-based approach.[8] Social networks were categorized into three types: **kinship networks** (relationships with family members and relatives living in Canada), **friendship networks** (ties with friends) and **organizational networks** (participation of immigrants in groups and organizations such as community organizations, religious groups, and ethnic or immigrant associations).

Engagement within each type of network was defined by the amount of social involvement and social support (such as the number of people or groups involved, ethnic diversity, frequency of contact between network members) and network reciprocity (help received from the networks and contributions made to the networks).

Indicators were developed to measure social capital by using a network-based approach. Social networks were categorized into three types: kinship networks, friendship networks and organizational networks.

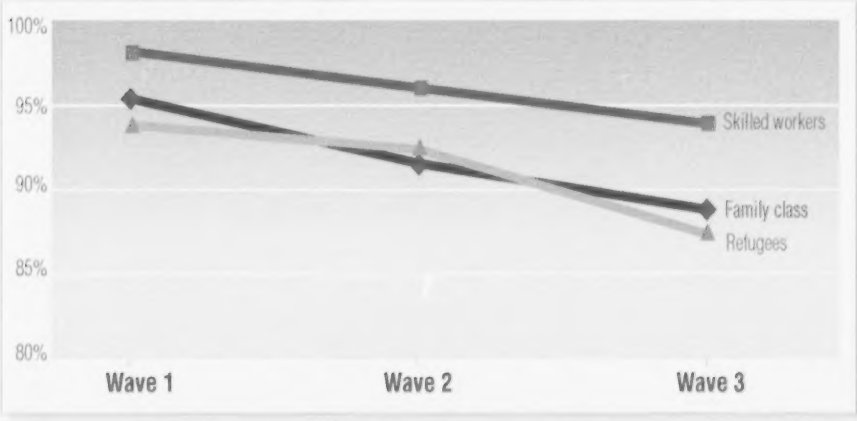
Through the use of econometric models, the regression analysis controlled for other socioeconomic variables, including family income quartiles, employment status, age, sex, immigrant category, source area, educational level at arrival, ability to speak either official language, and incidence of problems accessing Canadian health care system.

Health Status Across Immigrant Categories

Using descriptive analysis techniques, health status differences were found across the various immigrant categories. Obvious disparities among immigrant sub-groups are evident, with an overall decrease in health status over the three interview waves (see Figure 1). For example, nearly 4,000 skilled workers who had self-reported as being healthy six months following immigration did not consider themselves to be healthy when surveyed three and a half years later. These findings support the existence of the healthy immigrant effect and its decrease over time in Canada (see article on page 17).

At each interview wave, the skilled worker category had the largest percentage of healthy immigrants, followed by family class immigrants and refugees. Refugees were more likely to report being unhealthy initially because they were more likely to come from areas of conflict with poor public health infrastructure, and were more likely to be at risk for malnutrition and infectious diseases. Furthermore, many refugees may have suffered physical or emotional trauma and unhealthy living conditions prior to immigration.

Figure 1 Percentage of Permanent Residents Self-Reporting as "Healthy," by Immigration Category



	Family class		Skilled workers		Refugees	
	Healthy	Total	Healthy	Total	Healthy	Total
Wave 1	40,630 (95%)	42,615	92,747 (98%)	94,544	9,136 (94%)	9,741
Wave 2	39,051 (92%)	42,615	90,758 (96%)	94,527	8,989 (92%)	9,734
Wave 3	37,853 (89%)	42,615	88,815 (94%)	94,543	8,509 (87%)	9,741

Source: Statistics Canada. Longitudinal Survey of Immigrants to Canada, 2005.

Networks and Health

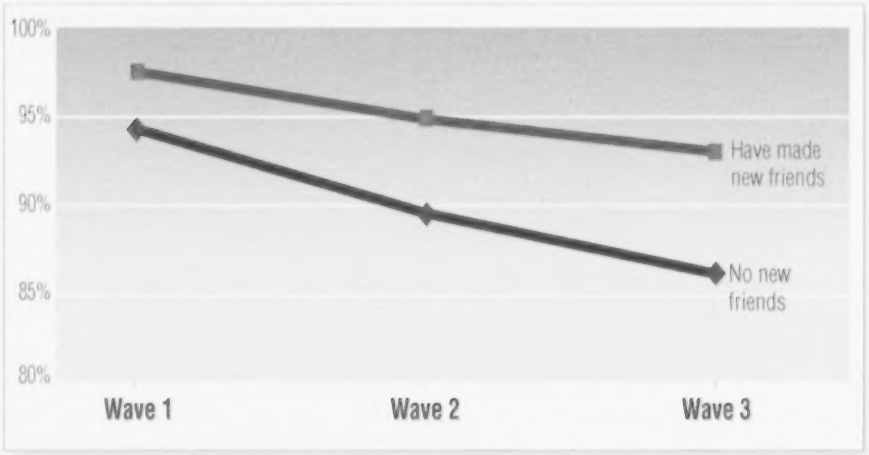
Descriptive analysis techniques were also used to examine the effects of friendship and organizational networks on the immigrants' self-rated health.

Friendship networks

Friendship networks of recent immigrants to Canada represent an extremely important source of support and assistance.[7] Permanent residents who had made new friends after their arrival in Canada were more likely to report better health status in all three waves than those who had not made new friends over the four-year period (see Figure 2). For example, by four years following immigration, only 86% of the nearly 19,000 people who had not made any new friends considered themselves to be healthy, compared with 93% of the nearly 127,000 immigrants who had made new friends.

These findings may be largely related to the ability of friendships to promote a sense of belonging and reduce loneliness. A sense of belonging can be considered to be a possible emotional outcome.[12] Friendship networks also have potential impacts on permanent residents' settlement outcomes and integration into Canadian society (e.g., housing, employment, education and health care services usage[6,7,8]), which may also affect both their emotional and physical health.

Figure 2 Percentage of Permanent Residents Self-Reporting as "Healthy" by Having New Friends



	No new friends		Have made new friends	
	Healthy	Total	Healthy	Total
Wave 1	20,518 (94%)	21,771	132,355 (97%)	135,809
Wave 2	8,541 (89%)	9,547	140,502 (95%)	148,046
Wave 3	18,537 (86%)	21,535	126,424 (93%)	136,080

Source: Statistics Canada. Longitudinal Survey of Immigrants to Canada, 2005.

Organizational networks

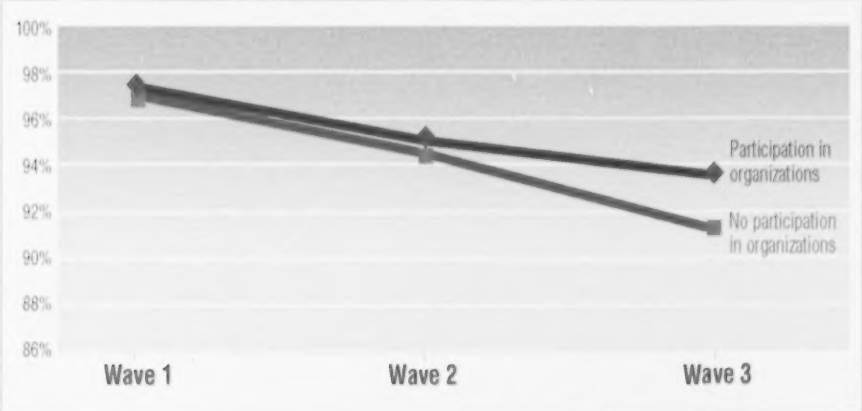
Organizational networks such as community organizations, religious groups, and ethnic and immigration associations are important sources of assistance for recent immigrants. Findings indicate that the percentage of immigrants involved in group or organizational activities increased with length of stay in Canada. At six months after arrival (i.e., Wave 1), there were almost no differences in the health status between immigrants involved in organizational or group activities and those who were not involved in such activities (see Figure 3). In contrast, two years after arrival (i.e., Wave 2), the proportion of immigrants who reported being healthy was larger among immigrants involved in group or organizational activities than among those who were not involved. At four years after arrival (i.e., Wave 3), the gap widened to three percentage points (i.e., by four years following immigration, only 91% of the nearly 100,000 people who were not participating in organizational networks considered themselves to be healthy, compared with 94% of the nearly 46,000 participating immigrants).

Organizational networks such as community organizations, religious groups, and ethnic and immigration associations are important sources of assistance for recent immigrants. Findings indicate that the percentage of immigrants involved in group or organizational activities increased with length of stay in Canada.

Social Capital and Health Status

Regression analysis techniques were used to determine quantitatively the differences in health status among immigration categories, the effect of various aspects of social capital on health status, as well as the statistical significance of those relationships.

Figure 3 Percentage of Permanent Residents Self-Reporting as "Healthy" by Participation in Organizations



	Participation in organizations		No participation in organizations	
	Healthy	Total	Healthy	Total
Wave 1	35,560 (97%)	36,553	117,348 (97%)	121,062
Wave 2	41,715 (95%)	43,921	107,328 (94%)	113,672
Wave 3	45,635 (94%)	48,786	99,326 (91%)	108,829

Source: Statistics Canada. Longitudinal Survey of Immigrants to Canada, 2005.

Health status across immigration categories

Regression analysis results confirmed that health status was significantly different across all three immigration categories (controlling for other characteristics). Compared with family class immigrants, skilled worker principal applicants were more likely to report being healthy, while refugees were more likely to report being unhealthy.

Kinship, friendship and organizational networks

Permanent residents who had more diverse friendship networks, and who were in contact with their friends more frequently, were more likely to report being healthy. While neither kinship nor organizational networks had significant effects on the health of the overall immigrant study population, all three network types (i.e., kinship, friendship and organizational) had statistically significant effects on the health status of recent family class immigrants (see sidebar below).

Spotlight on Family Class

Relations with kin, as well as friendship and organizational networks, all had statistically significant effects on the health status of recent family class immigrants. Compared with other family class immigrants who did not regularly have contact with friendship or organizational networks, family class immigrants who interacted with friends or groups on a daily basis were more likely to report being healthy. In addition, family class immigrants with existing family ties in Canada upon arrival reported better health status than family class immigrants who did not have this advantage.

Policy Implications

Evidence from the LSIC has shown that social capital plays an important role for recent immigrants in the maintenance of good health during the initial years after arrival. Social capital research can be very useful in informing immigrant health policy.

Government of Canada programs such as the *Immigrant Settlement and Adaption Program*, the *Language Instruction for Newcomers Program* and the *Host Program*[13] can play a significant role in increasing the social capital of permanent residents and, in turn, beneficially affect their health outcomes. These programs can support and promote recent permanent residents' settlement and integration into Canadian society by facilitating the building of bonding and bridging networks and community connections.

Governments can also encourage policies and programs that facilitate linkages between organizations and agencies involved in immigrant population health. Inter-institutional networks can increase the effectiveness of existing programs and can lead to the development of new programs. Further research on the effect of social capital on the health of immigrants is needed to create a more robust evidence base to inform the development of policies and programs. Looking forward, the development and funding of immigrant health-based databases, or the addition of a larger immigrant sample to currently existing health-based databases, may also be beneficial. ■

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Migration Health for the 21st Century

Dr. Brian Gushulak, Migration Health Consultant (former Director General, Health Management Branch, Citizen and Immigration Canada, and former Director of Medical Services for the International Organization of Migration)

Migrant origins and destinations, together with the sheer number and changing demographics of mobile populations, make migration an evolving and important component of globalization. In this closing article, the author reflects on some key points from the previous articles and discusses the opportunities and challenges associated with the diversity and disparities present in current migration dynamics.

Since the 1976 *Immigration Act*, a series of domestic and international events has significantly affected immigration in Canada and has influenced several migration-associated health factors. Decolonization, the international development of many nations and changes in Canadian immigration policies have combined to create a dramatic shift in immigration patterns.

Associated with these demographic shifts are cultural, linguistic, economic and social changes in the composition of migrant populations. Some of these differences may influence access to and use of existing health care services while generating new needs for cultural competency within the health care sector.

Evolving Patterns: Diversity and Disparities

With shifting immigration patterns, newcomers are now arriving from countries where the health outcomes and determinants are quite different from those of the Canadian population. While these differences are often positive—especially in relation to certain chronic diseases—research has shown that this health advantage declines over time. Furthermore, infectious diseases, which have been controlled or eliminated in host countries like Canada, may be common in migrants' source countries. In some cases, chronic or persistent infectious diseases in immigrants, particularly those that are rare or uncommon in Canada, can continue to exert greater epidemiological importance. For example, the majority of tuberculosis cases in Canada now occur among the foreign-born population.

Global disparities in access to health care may result in more prevalent, or more severe, chronic illnesses in some less affluent migrant cohorts than in the native-born populations of host countries. Dealing with health conditions that arise beyond national jurisdictions may require an evolution in existing health policies which have historically focused on health status at the time of immigration.

Confronting the Challenges

Traditionally, Canada's migration health policies and practices centred on identifying people who should be excluded from admission, and may have paid insufficient attention to the longer term health issues facing those being admitted. Over time, as migration health has become progressively more concerned with the health of migrants as they resettle in Canada, maintaining their continued good health has become an increasingly important goal—one that will enhance or maximize their contribution to Canadian society while creating a more equitable society for all Canadians.

As the population of immigrants and their children is increasing, the population health implications of differences in health determinants between immigrants and native-born Canadians are achieving greater importance in health planning. The deteriorating health of many immigrant groups is prompting researchers and policy makers alike to consider the factors underlying these negative health changes.

Embracing a determinants of health approach to mitigating these changes will require action on a number of fronts.

Fostering settlement and long-term integration

Although settlement policy aims to help newcomers become participating members of Canadian society, it generally focuses on the early stages of settlement. Consideration must also be given to meeting the longer term needs of immigrants. Action on the social determinants of health in host communities (e.g., increasing access to affordable housing, providing language and skills training, establishing comprehensive child support, and supporting social and organizational networks) is critical to helping newcomers find meaningful employment and to ameliorating the conditions that are associated with poverty and marginalization.

Supporting those most at risk

As previous articles have shown, certain migrant groups are at greater risk than others of transitioning to poorer health. While difficult migration experiences can put some groups at greater risk, post-migration factors related to the process of integration (e.g., language and job skill deficits, underemployment, poverty and social exclusion) can further increase the risk of deteriorating health. Concern is also growing about the particular vulnerability of "non-status" or undocumented migrants. While research is beginning to shed light on the negative health effects of precarious immigration status, this represents an area worthy of future attention.

Promoting cultural and linguistic competency

There is growing evidence that cultural and linguistic competency in the health sector can enhance service delivery and use. Migrant-friendly services including easy access to all levels of care, the involvement of migrant communities in the sector, and the familiarization of health care workers with the immigration process and the challenges of migration combine to create environments that are associated with better health outcomes.

Ensuring access to health care

In Canada, there are still areas where domestic health policy, as it pertains to migrants, may require attention. For example, the three-month residency requirement to qualify for provincial/territorial health insurance can affect coverage for new immigrants. Migrants with sufficient funds may obtain private insurance to cover this gap, but the less affluent, or those with pre-existing illness, may have to wait to qualify for insurance. While emergency or acute care may be provided, non-urgent and preventive care is often delayed until insurance is available. Such delays may be associated with deteriorating health status and increased future costs to the health sector.

Policy Formulation: Achieving a Balance

Migration health policies and programs are the product of two influencing elements. One relates to the general processes, attributes and needs that are shared by all migrant populations. The second reflects the specific needs and determinants related to smaller and more defined migrant sub-sets. While all migrants share some characteristics, certain cohorts (e.g., migrant worker populations, refugees, displaced populations, asylum seekers, irregular or unofficial migrants, and other vulnerable cohorts) are associated with specific health issues.

Migration health frameworks need to be a dynamic balance of these two influencing elements. While providing for policies that address the general health implications of migration, they must also focus appropriate attention on those with specific needs. These two elements assume significance, depending on how migrant health status, needs and determinants are represented and considered. For example, large aggregate presentations can diffuse or minimize important differences present in smaller cohorts. Similarly, specific characteristics of particular migrant cohorts may not be representative of larger migrant populations even if they share some migration elements.

This issue of the Bulletin exemplifies many aspects of these complex relationships. Examples of the benefits of large, longitudinal studies are presented as they influence and inform policy at the macro level. Studies into the health needs of smaller more defined cohorts are also included, as they provide policy guidance for those with specific needs.

A Closing Word

Today's migration health activities involve the dynamic interface of social, demographic, health and legislative processes, which in turn are continually being influenced by globalization and population mobility. These are among the many reasons that combine to make the study of migration health so interesting and relevant in the globalized and mobile world of the 21st century. ■

Using Canada's Health Data

Using Canada's Health Data is a regular column of the *Health Policy Research Bulletin* highlighting some of the methodologies commonly used in analyzing health data. In this issue, we look at how data collection tools have evolved over time to help facilitate advances in immigrant health research.

Edward Ng, PhD, Health Analysis Division, Statistics Canada

The Evolution of Immigrant Health Data in Canada

With the projected rise of the immigrant population in Canada, from 19.8% of the overall population in 2006 to 25%–28% by 2031,[1] it will become increasingly important to monitor immigrant health in Canada. Over the last several decades, the richness of data captured by national, provincial and territorial population-based databases, many of which are housed at Statistics Canada, has improved dramatically, as have methodological advancements in combining databases. These developments have allowed researchers to conduct increasingly innovative studies of immigrant health outcomes in Canada.

First Generation Data: Administrative Databases

Vital statistics databases, hospital discharge databases and disease registries have been the foundation of monitoring population health in Canada; however, they do not contain information about immigration status per se. Researchers studying immigration health outcomes routinely use the "place of birth" variable in the birth and mortality databases as a proxy for immigration status (see Table 1).

When using hospital discharge databases, researchers may use a postal code as a proxy for immigrant status; this is done by looking at the percentage of immigrants by neighbourhood, as determined by the Canadian Census. While this type of analysis is straightforward, the results are subject to imprecision.

Another important data gap associated with first generation data is the lack of information about when immigrants arrived in Canada. One of the main hypotheses in immigrant health research is that immigrants tend to arrive in better health than their Canadian-born counterparts (the healthy immigrant effect), but that this health advantage seems to disappear over time (see articles on pages 17 and 26). Knowing the length of stay in Canada is key to this type of research.

Second Generation Data: Surveys

The Canadian Census has often been described as the mainstay of immigration research in Canada, as it is rich in information related to the socioeconomic integration of immigrants (including the "time of arrival" variable); however, it contains minimal health data.

Since the early 1990s, researchers have gained a new generation of databases with which to monitor and understand the health of immigrants over time. The implementation of large population-based health surveys such as the National Population Health Survey and the Canadian Community Health Survey have provided health practitioners, researchers and policy makers with information to help understand the overall health of Canadians and the Canadian immigrant population. Typically, these health surveys ask for the birthplace of the respondents, whether they are Canadian citizens by birth and, if not, their time of arrival in Canada. These have enabled researchers to examine the effects of key immigration characteristics such as length of stay and birthplace on immigrant health (see Table 2).

Table 1 Use of Administrative Databases for Immigrant Health Research

Data Source	Examples of Studies
The Canadian Birth Database	Used to study the impact of maternal birthplace on birth outcomes.[2]
The Canadian Mortality Database	An innovative study compared mortality rates among Canadian-born, Scandinavian-born immigrants and Scandinavians in their source countries.[3]
Canadian Tuberculosis Reporting System	A study compared the risk of TB in Canada among Canadian-born and immigrant populations.[4]

In addition, other non-health surveys, such as the Longitudinal Survey of Immigrants to Canada and the International Adult Literacy and Skills Survey, have also been used to examine the factors related to the healthy immigrant effect and the possible causes for its decline (see Table 2).

However, survey data are subject to a number of limitations, including the following:

- Self-reported survey responses may be influenced by cultural differences in the interpretation of the questions.
- Self-reported surveys may be subject to recall bias.
- Most surveys are cross-sectional (i.e., data from all respondents are gathered at one point in time, rather than the same individuals being followed over time).
- Sample sizes may not be large enough to study immigration sub-groups.
- Existing longitudinal immigrant-specific surveys do not permit comparisons with the Canadian-born population or people residing in countries of origin.

A partial solution to the paucity of longitudinal data is to create "synthetic" immigrant cohorts by pooling cycles of cross-sectional surveys. This technique of approximating longitudinal data is currently being used by researchers to study the healthy immigrant effect.[5,6]

Third Generation Data: Linked Data

Making adjustments to include more immigrant-related information in current health administrative databases has been suggested.[7,8] However, as making such changes is a complex undertaking involving extensive federal/provincial/territorial consultation, linking databases may perhaps be the most viable option.

While maintaining privacy and confidentiality guidelines, the improved capacity to combine data by way of record linkage adds value to the existing data holdings at Statistics Canada, when the appropriate variables used for linkage are available in the respective databases. The wealth of information that can be gleaned from these combined databases addresses many data gaps that have previously existed.

One such example is the linkage of a sample of the Citizenship and Immigration Canada (CIC) immigrant arrival records (from 1980 to 1990) with the Canadian Mortality Database and the Canadian Cancer Registry (see Table 3). Additional linkage was done for the top three immigrant-receiving provinces (i.e., Ontario, Québec and British Columbia) to their health service use (through physician claims and hospitalization records).[9]

Statistics Canada is currently engaged with various provincial and territorial ministries of health to move ahead with data linkages in a longitudinal data linkage project involving census data. The possibility of linking

Table 2 Use of Surveys in Immigrant Health Research

Health Surveys	Sample Research Findings
National Population Health Survey	Immigrants from non-European countries were twice as likely as the Canadian-born population to report health deterioration over an eight-year period.[10]
Canadian Community Health Survey	There is evidence to support the healthy immigrant effect in both physical and mental health.[11,12]
Health Services Access Survey	Immigrants reported more difficulties accessing immediate health care when compared with Canadian-born respondents.[13]
Maternity Experience Survey	Immigrant women take pre-conception folic acid supplements at much lower rates than do Canadian-born women.[14]
Non-Health Surveys	
Longitudinal Survey of Immigrants to Canada	Social capital is important in maintaining immigrant health[15] (see article on page 41).
International Adult Literacy and Skills Survey	Immigrants have a significantly lower level of health literacy than the Canadian-born.[16,17]

Table 3 Use of Linked Data for Immigrant Health Research

Linked Data Sources	Examples of Studies
1991 Census linked to the Canadian Mortality Database	The *Census Mortality Follow-up Study* showed that overall mortality rates were substantially lower among immigrants than Canadian-born, and that this advantage decreased with length of stay in Canada.[18]
Hospitalization records from the Ontario Discharge Abstract Database (Canadian Institute for Health Information) linked to the Ontario Health Insurance Registry (Registered Persons Database)—for Toronto only	A study analyzing birth outcomes for immigrant mothers in Toronto found that recent immigration was associated with a lower risk of preterm birth, but a higher risk of low birthweight and full-term low birthweight.[19]
Canadian Immigration Databases (CIC) linked to the Canadian Mortality Database and the Canadian Cancer Incidence Database	Both refugees and non-refugees were found to be at lower mortality risk compared with the general Canadian population; among non-refugees, the risk of death increased with length of stay in Canada.[20]

census data to hospital discharge databases would give researchers the capacity to study hospitalization risk by key immigration characteristics, such as immigration status, length of stay, place of birth, etc., while also taking into account the impact of sociocultural and economic factors. Similarly, linking census data to the Canadian Cancer Registry would allow for comparisons of cancer incidence across provinces, by key immigration characteristics (while also controlling for socioeconomic differences). These comparisons have not previously been possible. In addition, linkage of health surveys to hospital discharge data would allow for the study of variations in health care use, controlling for key immigration characteristics.

Microsimulation modelling can integrate different generations of health data to compare scenarios (e.g., disease prevention or screening uptake) and to reveal data gaps.

Integrating Three Generations of Data: Microsimulation Modelling

Microsimulation modelling can integrate different generations of health data to compare scenarios (e.g., disease prevention or screening uptake) and to reveal data gaps. Microsimulation models the population with attributes such as risk factor exposures, health histories and typical Canadian demographic characteristics. These models generate realistic future projections of status quo trends and allow for the ability to test "what if" scenarios related to potential policy and program interventions. Microsimulation modelling also allows researchers to examine the health impacts of various immigrant-specific policy interventions as well as their cost implications.

A Look Ahead

An *ideal* database for immigrant health research in Canada would include the following:

- **Data collection:** from three populations—immigrants to Canada, the Canadian-born, and people residing in all or selected countries of origin[3]—would capture changes in objective and self-reported health and migration-related health risk factors, including health care access and patterns of health system use over time.
- **Data analysis:** allowing longitudinal comparisons among the three populations (above) would help researchers understand how the immigrant health advantage is lost over time.
- **Information on immigration category:** is important, as certain sub-groups, such as refugees, are known to have a higher risk for certain health problems.
- **Large sample sizes:** would allow for more accurate generalization of results and would allow researchers to consider simultaneously the health effects of such factors as ethnicity, gender, age, immigrant status, length of stay in Canada, place of birth, immigration class and religion.

While the third generation linked databases described earlier provide some capacity to evaluate the healthy immigrant effect and its decline over time, the development of a new database specific to the needs of immigration health research would be key to studying this phenomenon further. ■

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Who's Doing What?

Who's Doing What? is a regular column of the *Health Policy Research Bulletin* that looks at key players involved in the current theme area. In this issue, we present an overview of the stakeholders in the migration health research field.

Solange van Kemenade, PhD, Senior Research Analyst, and **Nabanita Giri**, Director, both from Strategic Policy and International Affairs, Public Health Agency of Canada

Government of Canada

Public Health Agency of Canada (PHAC)[1]

Since 2007, PHAC has been a partner in the Metropolis Project and has commissioned research on immigrant and refugee mental health,[2] health literacy,[3] and racialization and racism as determinants of health.[4] Currently, PHAC is conducting two studies on elderly immigrants: a demographic and socioeconomic profile, and a literature review on the health status and social determinants that could affect the health of this population. For more information, please contact: Solange.van.Kemenade@phac-aspc.gc.ca

Beyond Metropolis, PHAC has been working on chronic diseases, primary health, social determinants of health,[5] and infectious diseases, such as HIV/AIDS and hepatitis B, with respect to migrant populations.[6,7] Other research includes evaluative research related to programs that have a significant proportion of immigrant participation, such as the Canada Prenatal Nutrition Program and the Community Action Plan for Children. As well, the public health implications of agricultural temporary migration and the social determinants of health among migrant farm workers in Canada have been examined.[8,9]

The PHAC Migration Health Network, created in 2007, consists of representatives from work units engaged in migration activities. For more information: PHAC_MHN_RSM_de_lASPC@phac-aspc.gc.ca. Finally, PHAC has recently concluded the Strategic Policy Research Assessment, a scan of existing research and gaps on 14 public health priority themes. Chapter 7 is dedicated to migration health. For more information: Solange.van.Kemenade@phac-aspc.gc.ca

Health Canada

Health Canada conducted literature reviews on immigrants' health in the late 1990s.[10] Subsequently, a review of the research on the health and determinants of health of Canadian immigrants provided policy makers with the implications of such demographic changes on the health system.[11] A recent joint study with Citizenship and Immigration Canada examined the influence of social networks on the health outcomes of newcomers to Canada.[12]

In 2007, Health Canada's Office of Nutrition Policy and Promotion, in partnership with Heritage Canada, conducted qualitative research on healthy eating among specific ethnocultural communities.[13] Focus groups were completed with intermediaries who work with new immigrants to determine what information, tools or processes could assist people from these communities in making healthy food choices. *Eating Well with Canada's Food Guide* is now available in 10 languages (other than English and French), reflecting the diversity of foods in Canada. For more information: nutrition@hc-sc.gc.ca

Canadian Institutes of Health Research (CIHR)

Research on migration health funded by CIHR since 2003 has focused on access to health care among immigrant populations in Canada (one project compared Canadian immigrant populations with those in the United States) and infectious diseases such as HIV/AIDS and tuberculosis. For more information: http://www.cihr-irsc.gc.ca/

Statistics Canada

Statistics Canada researchers have examined immigrant health outcomes and are currently analyzing census mortality, looking at variations in immigrant mortality by length of time since arrival and place of birth.[11] In addition, an analysis of the Longitudinal Survey of Immigrants to Canada examines the impact of the persistent lack of official language proficiency on immigrant health. For more information, please contact: Edward.Ng@statcan.gc.ca, or visit: http://www.statcan.gc.ca/

Immigrant Cancer Incidence and Mortality Project

Under contract with the Canadian Partnership Against Cancer, Statistics Canada will be conducting a geography-based analysis (using Census and Canadian Cancer Registry data), to determine whether cancer incidence and mortality rates are higher in areas with a greater concentration of immigrants. For more information, please contact: gisele.carriere@statcan.gc.ca

Citizenship and Immigration Canada (CIC)

CIC has been involved in research on immigrant and refugee mental health, barriers to health care services

faced by recent immigrants, socioeconomic determinants of health and health care utilization of immigrants, access to health services of sponsored parents and grandparents, and on social capital and health status of immigrants (jointly with Health Canada). CIC also funds research studies, such as the National Study of Refugee Mental Health Practices, which will examine refugee mental health and service providers' needs. For more information, please contact: Anne-Marie.Robert@cic.gc.ca, or visit: http://www.cic.gc.ca/

Canadian Partnerships

Canada Research Chairs

Several Canada Research Chairs are conducting studies related to migration health, including those aimed at understanding the healthy immigrant effect and the decline in health among immigrants and refugees to Canada, especially women. For more information: http://www.chairs-chaires.gc.ca/

Mental Health Commission of Canada

In 2009, the Mental Health Commission released a report which included findings from more than 50 national and regional studies that looked at the mental health of diversity groups in Canada. This report included 19 recommendations aimed at improving the mental health system and increasing the availability and accessibility of culturally safe services for these groups.[15] For more information: http://www.mentalhealthcommission.ca/SiteCollection Documents/News/en/IO.pdf

Metropolis Project

Metropolis is an international network for comparative research and public policy development on migration, diversity and immigrant integration in cities in Canada and around the world.[16] In Canada, research is conducted in partnership with federal departments, and includes research in areas such as housing and homelessness, family conflict and violence, immigrant seniors, economic outcomes and urban environments.

Research resulting from the fourth cycle of the national research competition (2010) will examine the economic outcomes and consequences of poverty amongst growing visible minorities in Canada, as well as the policies that could prevent and support the emergence from poverty. For more information: http://www.metropolis.net/

International Research

World Health Organization (WHO)

At the international level, the vulnerabilities and health care needs of migrants were addressed by the WHO in 2008, when it set out strategies to address these concerns. For more information: http://www.who.int/en/

United Nations Children's Fund (UNICEF)

Through the Innocenti Research Centre (IRC), UNICEF has been involved in research related to the effects of migration on children. The IRC has also been working to develop cross-country databases on children in order to improve child health research and policy development. For more information: http://www.unicef.org/research/index.html

Organisation for Economic Co-operation and Development (OECD)

The OECD collects comprehensive data on the education levels and labour market outcomes of the native-born offspring of immigrants (the so-called "second generation") and compares them with the offspring of natives in the 16 OECD countries. The OECD has also explored the social, economic and environmental forces that attract migrants to OECD countries. For more information: http://www.oecd.org

International Organization for Migration

This intergovernmental organization works with migrants and governments to respond to contemporary migration challenges by facilitating the orderly and humane management of international migration. Worldwide research activities include international migration law, labour migration, counter-trafficking, and integration and return migration. For more information: http://www.iom.int

Reproductive Outcomes and Migration (ROAM)

ROAM is a research collaboration that began in 2004 between Canadian and Australian researchers and has grown into a broader collaboration among 33 researchers from 13 countries. For more information: http://mcgillglobalhealth.info/cms/view_country_info.cfm?country=38&m=3&sm=12#anchor_current_332 ■

Please note: Full references are available in the HTML version of this issue of the Bulletin: http://www.healthcanada.gc.ca/hpr-bulletin

Dear Colleagues,

Health Canada's *Health Policy Research Bulletin* was first published in 2001 with the aim of stimulating evidence-based policy discussion on health and/or health care issues of national importance. Focused on a particular theme, each edition has presented health policy research that has been conducted by, or for, Health Canada or the Public Health Agency of Canada.

Over the course of 17 issues, the Bulletin has examined a range of themes and has drawn on the gamut of research disciplines that inform health policy making: from bio-medicine and the physical sciences, to epidemiology and mathematics, to health economics and the social sciences. The Bulletin staff have collaborated with researchers, scientists and policy makers from across government and their academic partners who have contributed articles to the publication. Through a process of dialogue and engagement, the Bulletin staff have worked with authors to position their research articles within a comprehensive policy frame. Additionally, members of the Bulletin Steering Committee have made an invaluable contribution of both time and expertise in reviewing each issue.

With the release of this issue, the Bulletin has been suspended while policy research translation needs are being assessed. As my planned retirement coincides with this decision, I would like to thank the more than 300 authors and reviewers who have contributed to the Bulletin over the past decade. On their behalf, I convey the hope that readers have found the Bulletin to be both illuminating and useful. Readers should be aware that all 17 issues (see sidebar) will remain on Health Canada's website and print copies of most issues will continue to be available (see Publisher's Box, page 2, for more information).

It has been a privilege to have had the opportunity to guide the development and publication of the *Health Policy Research Bulletin*. Each issue has been a learning experience and has enabled me to meet and work with dedicated health professionals who have been committed to research and policy making that will benefit the health of Canadians.

Sincerely,

Nancy Hamilton

Nancy Hamilton
Managing Editor
Health Policy Research Bulletin

Following is a list of issues of the *Health Policy Research Bulletin* published to date.

- Financial Implications of Aging for the Health Care System (March 2001)
- The Next Frontier: Health Policy and the Human Genome (September 2001)
- Health Promotion—Does it Work? (March 2002)
- Health and the Environment: Critical Pathways (October 2002)
- Closing the Gaps in Aboriginal Health (March 2003)
- Antimicrobial Resistance: Keeping it in the Box (June 2003)
- Complementary and Alternative Health Care: The Other Mainstream? (November 2003)
- Health Human Resources: Balancing Supply and Demand (May 2004)
- Child Maltreatment: A Public Health Issue (September 2004)
- Changing Fertility Patterns: Trends and Implications (May 2005)
- Climate Change: Preparing for the Health Impacts (November 2005)
- Social Capital and Health (September 2006)
- The Working Conditions of Nurses: Confronting the Challenges (February 2007)
- People, Place and Health (November 2007)
- Emergency Management: Taking a Health Perspective (April 2009)
- Regulatory Modernization: Reshaping Canada's Health and Safety Systems for Food, Health and Consumer Products (March 2010)
- Migration Health: Embracing a Determinants of Health Approach (December 2010)